THE AUTOMOBILE

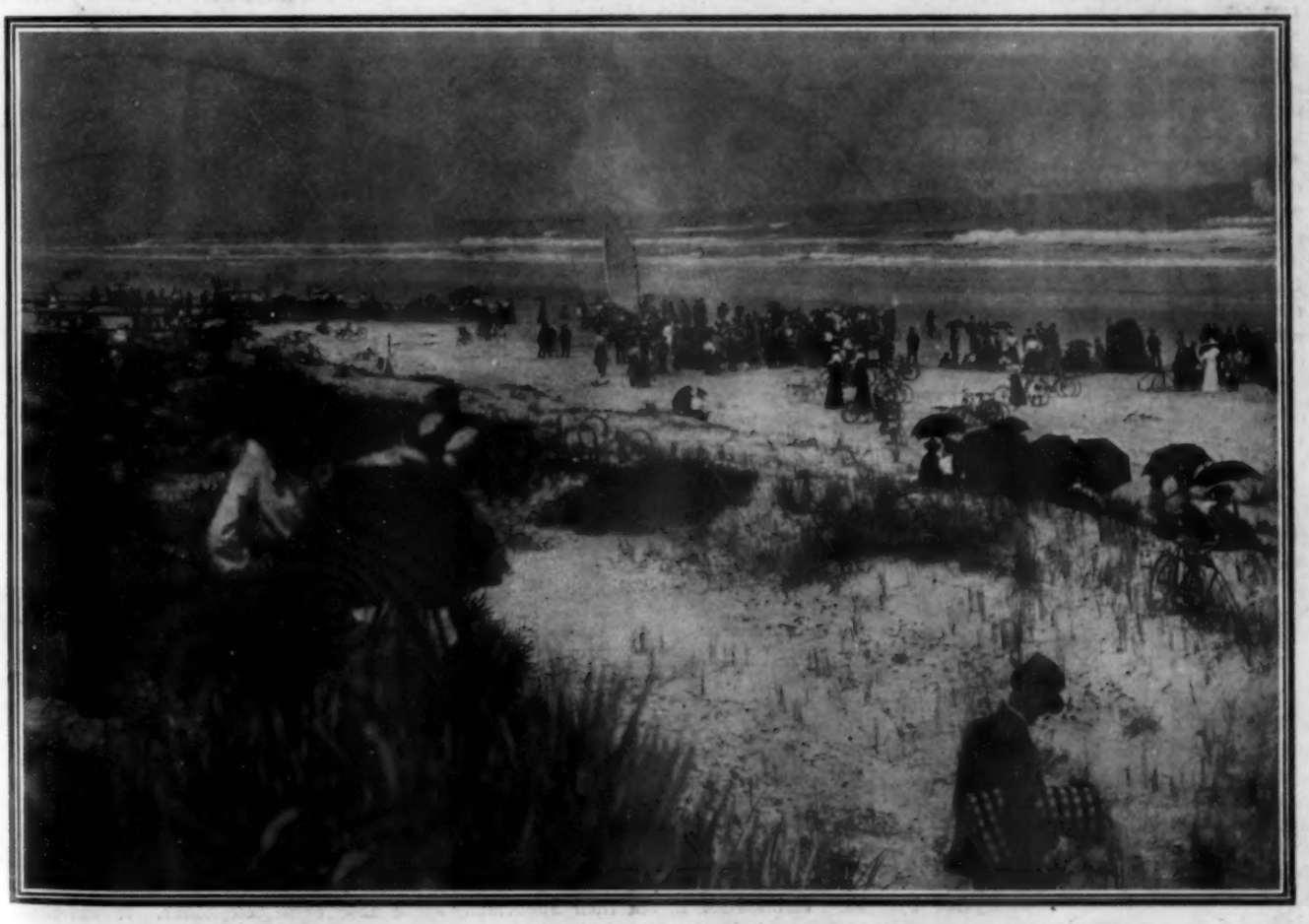
WEEKLY — NEW YORK — SATURDAY, APRIL 4, 1903 — CHICAGO — 10 CENTS

Straightaway Records Smashed in Florida.

Alexander Winton, H. T. Thomas and Oscar Hedstrom Create New American Figures with the "Bullet," the "Pirate" and the "Indian"—Events Draw Thousands of Northern Resorters and Native Residents—Florida East Coast Automobile Association Formed to Repeat Tournament Annually.

Special Correspondence.

ORMOND, Fla., March 28.—A new crop of American straightaway records and the organization of the Florida East Coast Automobile Association is the net result of the three days of racing and speed trials on the Daytona-Ormond beach that ended to-day. Alexander Winton, with his "Bullet," was unable to lower the record of :51 4-5 for the mile made by Henri Fournier on the Coney Island Boulevard in 1901, but he came within two-fifths of a second of tieing those figures to-day, when he did the mile in :52 1-5. He also cut his own ten-mile track time from 10:50, made at Brighton Beach last August, to 10:26 1-5.



WAITING ON THE OCEAN SANDS AT DAYTONA, FLORIDA, FOR THE START OF THE AUTO RACES.

establishing a ten-mile straightaway record for America. H. T. Thomas made a big cut in the straightaway mile record for machines weighing less than 1,000 pounds,

WINTON'S BULLET SPEEDING BY THE SAD SEA WAVES.

covering the distance in the Oldsmobile racer in 1:06 1-5 as agaiust the 1:27 3-5 made by Jacques Lonquevez on a DeDion, on the Coney Island Boulevard in 1901. The straightaway mile record for motor bicycles, held at 1:10 2-5, by C. H. Metz, made on Staten Island last May, was cut into by Oscar Hedstrom, on an Indian motor bicycle, who placed the figures at 1:03 1-5.

The tournament was promoted by the Florida Automobile Association, of Jacksonville; the Daytona and Seabreeze Automobile Association, and W. J. Morgan who acted as chief manager. The sanction was secured by the Florida Automobile Association, but it took no part in the events or management of the tournament. The principal prizes were donated by the Florida East Coast Railway, the Seaboard Air Line Railway, the Ormond Hotel, Daytona-Seabreeze citizens and R. E. Olds, who were also the main contributors to the expenses of the meet.

The events attracted thousands of spectators daily, many of them being northern visitors who had not yet returned North after spending the winter and spring here. So successful was the tournament that it has been decided to make it an annual affair, and an association for that purpose was formed yesterday, to absorb the Daytona and Seabreeze Associations and hold a week's tournament in the winter.

First Day's Events.

Despite the strangeness of an untried course and the lack of opportunity for preliminary practice over it, two of the aspirants for new figures in their class scored American records for a straightaway mile on the first day of the three days' tournament. The third rode the fastest mile of his racing career and cut his own world's track-record figures by six and a quarter seconds.

It was the debut for Alexander Winton and the Bullet in straightaway record riding, and at the finish of his trial, in which he scored 56 seconds, Fournier's 51⅘ seconds on Coney Island Boulevard, and Fred Walsh's 55⅗ at Staten Island, were the only American records left for him to strive against. The confident mien of the Winton contingent that night led to the inference of their belief that by Saturday night a French-made Mors would no longer be an American record holder.

A greater and more immediate triumph, however, was that scored by H. T. Thomas, who in the absence of Mr. Olds, drove the new Oldsmobile, 825-pound racer, a measured mile in 1:06⅕, thereby relegating to the past the former American record of 1:35⅗ for light vehicles made by L. O. Thompson and his Renault at Staten Island, May 31, 1902.

In one trial Oscar Hedstrom drove his Indian motor bicycle a mile in 1:09, and captured the American record. The former figures were 1:10⅗, made by C. H. Metz (Orient) at Staten Island last spring.

The record-breaking aspirants found in the broad, hard, level beach all that had been claimed for it, but their abnormally high speed developed a lack of traction owing to the slight yielding of the surface of the sand. Mr. Winton and Mr. Thomas thought at first that their clutches were slipping, but by comparing notes found that the tires did not hold perfectly and and that power was being lost in consequence. Mr. Winton set to work to remedy the trouble by notching his tires. Mr. Thomas regretted his small tires and proposed to wrap them with rope. Mr. Hedstrom did not complain of slipping, but the wheels filled his chain with sand, which shortened it and caused it to break, so that he had to abandon preliminary practice and trust to one trial.

TIMING APPARATUS CAUSES DELAY.

The first day's trials were run at the Ormond end of the course, while on the following day they took place at Daytona, which offered better conditions.

Following a cold, northeast rainstorm on Wednesday, came perfect June weather on Thursday. The wind was northeast and the course of the races followed its direction. The starting point was at Ormond and the finish a mile down the beach.

The beginning of the sport was set for 10 o'clock in the morning, but long before this hour the spectators began to arrive at the Ormond end of the course. There were a score of carriages and a dozen automobiles. Cycle chairs were numerous and there were bicycles in swarms. There were 1,000 on-lookers at the start, and 100 more had plodded a mile down the beach to the finish pole.

Captain H. G. Opdyke, the Automobile Club of America's engineer, was on hand early with the club's Mors timing machine. Frank X. Mudd, of the Chicago Automobile Club, was also there to look after one end of the line. Long delays were caused, however, by breaks in the wire, which was laid on the ground, caused by wagons driving over it, by waiting for more batteries and by making automobile trips from one stand to the other by the timers to test the instruments, owing to the absence of telephones. It was noon

SAND DUNES AND BEACH AT FINISH OF ORMOND DAYTONA COURSE.

(Continued on page 386.)

Morgan Four-ton Steam Truck —with Drawings.

An inspection of the accompanying reproductions of photographs and line drawings will give the reader a good idea of the principal features of the 4-ton steam trucks built by the Morgan Motor Company, whose chief engineer, R. L. Morgan, is best known, perhaps, as the designer of the Toledo steam carriage.

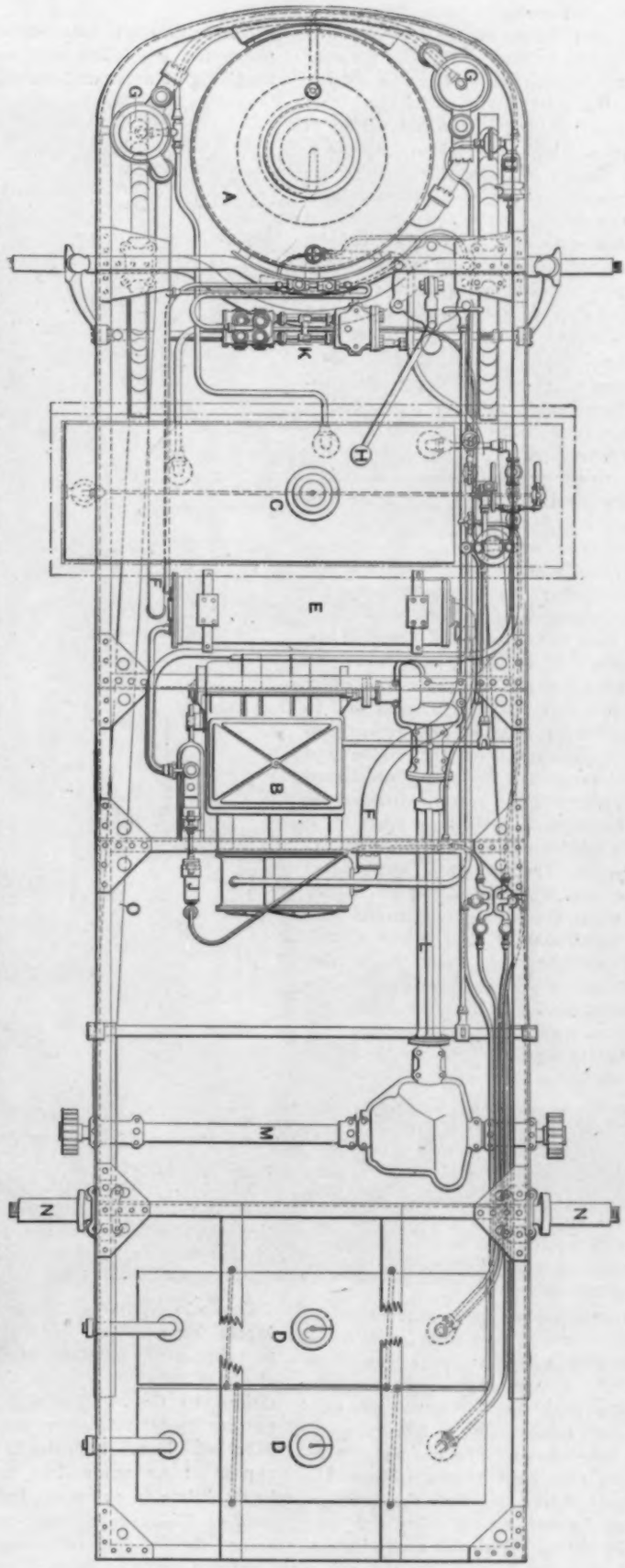
The general arrangement of the boiler, engine and tanks is substantially that common to most trucks of this type, but there are certain special features of detail, and the whole is an interesting example of up-to-date commercial vehicle design. The main frame is built up of 4-inch channel steel, with cross bars of the same material, strongly reinforced at all points. The front springs are elliptic and the rear springs semi-elliptic, and the axles are connected by strong tubular reaches, by which the driving force at the rear wheels is communicated to the body through both front and rear springs.

The boiler, located as usual in front, is of the water tube type, suggesting certain forms common on steam launches and small yachts. It has a cast metal mud ring and a small steam dome, connected by numerous tubes which carry practically all the water. These tubes are attached at both ends by union joints of special design, and it is claimed that a damaged tube may be replaced or removed and plugs inserted with great facility. The water line is near the tops of the tubes, so it is to be inferred that a certain amount of circulation takes place, contrary to the practice frequently met in water tube boilers, of having some of the tubes discharge above the water line, so that the upward motion of the steam does not imply circulation properly so-called. The makers claim to have produced a horse power with this boiler with 4 square feet of surface.

The steam dome itself is 14 inches in diameter and 30 inches in length, and the tubes are 120 in number. Attached to the top of the steam dome is a cast metal superheater, with external and internal ribs, which projects into the stack and utilizes heat that would otherwise be wasted.

The boiler is stated to be a solid casting of a special metal, presumably one of the bronze alloys, though particulars regarding it are not as yet obtainable. It is arranged to vaporize and burn crude oil without a steam jet. The supply of fuel is controlled by an automatic regulator which cuts the flame to the smallest practicable point when the truck is standing. The burner is stated to raise steam from cold water to 200 pounds pressure in 10 minutes.

The engine, shown in the photograph and assembled sections, is noticeable for



PLAN OF CHASSIS OF MORGAN STEAM TRUCK, SHOWING BOILER IN FRONT, ENGINE AMIDSHIPS, AND REAR WHEEL DRIVE.

A Boiler. B Engine. C Water tank. DD Fuel tanks. E Feed Water Heater. F Exhaust pipe. GG Separators. H Throttle lever. I Feed pump. J Air pump. K Auxiliary feed pump. L Bevel gear driving shaft case. M Countershaft containing differential. NN Rear axle spindles. O Reaches.

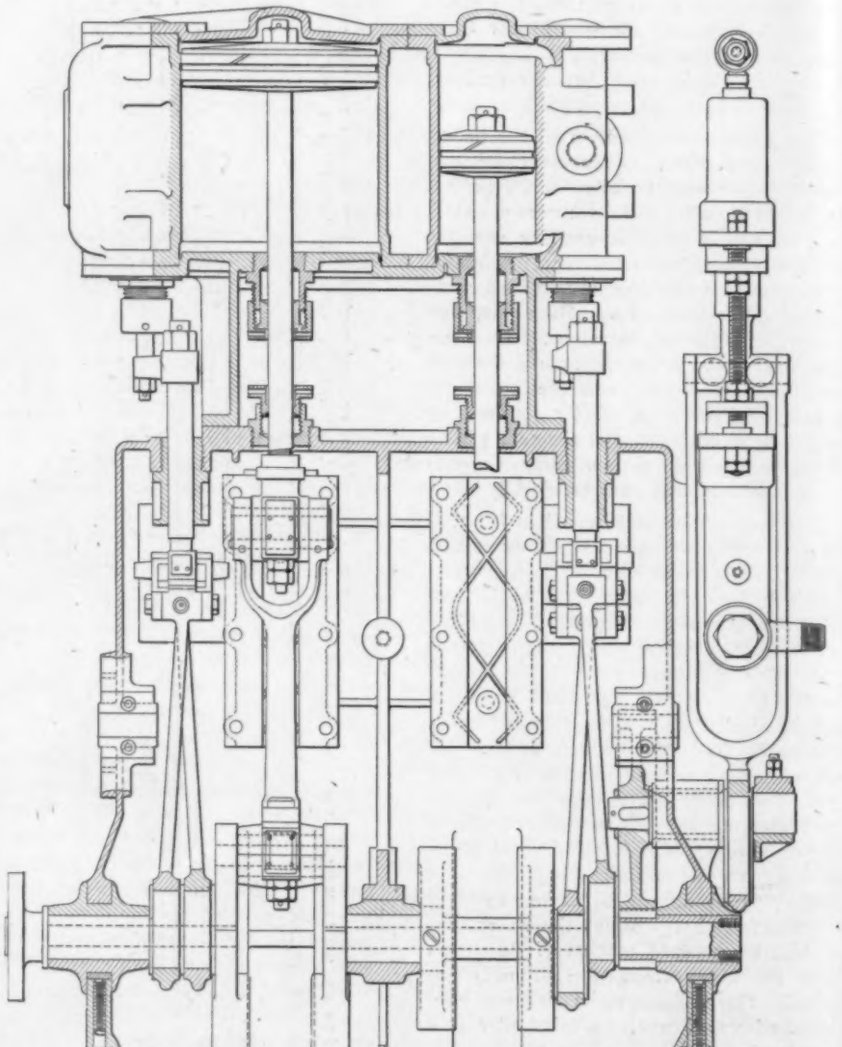
its very substantial design. It is of the ordinary cross compound type, with cylinders 3 inches and 6 inches by 5 inches stroke. An intercepting valve permits steam to be admitted to the low pressure cylinder for starting. The connecting rods, of the marine type, are forged from nickel steel; and the crankshaft also is of nickel steel and forged in one piece. As the drawings show, the cranks are liberally counter-weighted. Substantially all the working parts are enclosed in the crank case, which is lubricated by the splash system. Only the stuffing boxes of the piston and valve rods are exposed, this being done to permit ready access to them. The usual Stephenson link motion is employed.

Attached to the engine and worked together by an eccentric from a gear reduction of 5 to 1 from the crankshaft, are the boiler feed pump and an air pump designed to maintain automatically the necessary air pressure in the fuel tanks. Both are of liberal proportions, and the slow speed at which they work insures long life and a much more reliable action of their valves (which appear to be of the ordinary check type) than would be possible if they were run at the speed of the crankshaft. The feed pump takes its supply from a 100-gallon water tank under the driver's seat, which capacity is said to be sufficient for 25 miles of ordinary running. The exhaust from the engine and the feed water from the pump are passed through a feed water heater, which serves the purpose of a muffler as well, as it naturally condenses a good deal of the exhaust steam. The feed water, now heated to over 200 degrees, then goes to the boiler, while the exhaust steam and condensed water pass on to a pair of centrifugal separaters, the steam being discharged into the smoke stack, while the water is trapped back into the main tank to be used again. This is possible, the makers state, because they use no oil in the valves or cylinders of their engines.

To permit of pumping the feed water while standing, a Worthington steam pump is carried under the foot board. It may be used also in case or dirt getting into the valves of the regular water pump. To fill the tank a steam inspirator is provided, with a hose and strainer by which water may be picked up from neighboring watering troughs or tanks.

The transmission system of these trucks is of two forms. That shown in the drawing comprises a shaft and bevel gear drive to a cross counter-shaft containing the differential, with spur pinions at the ends of this shaft transmitting to internal gears on the rear wheels. The company, however, has also built trucks without the bevel gear drive, and with the countershaft so located as to drive the rear wheels by chains. With this type of transmission provision is made for the use of two ratios of speed between the engine and rear wheels; namely, 10 to 1 and 20 to 1.

As the principal functions of the power plant—the regulation of the burner, the supplying of water and maintaining of the air pressure—are accomplished automatically, the operator is free to give his practically undivided attention to the work of maneuvering. It can hardly be doubted that this is the proper objective to be aimed at, granted only that the automatic devices can be made sufficiently reliable so that they do not give trouble when the vehicle is out of the stable, as this permits the employment of a cheaper class of help for the vehicle's operation than would be possible if the driver had to perform the duties of an engineer as well.

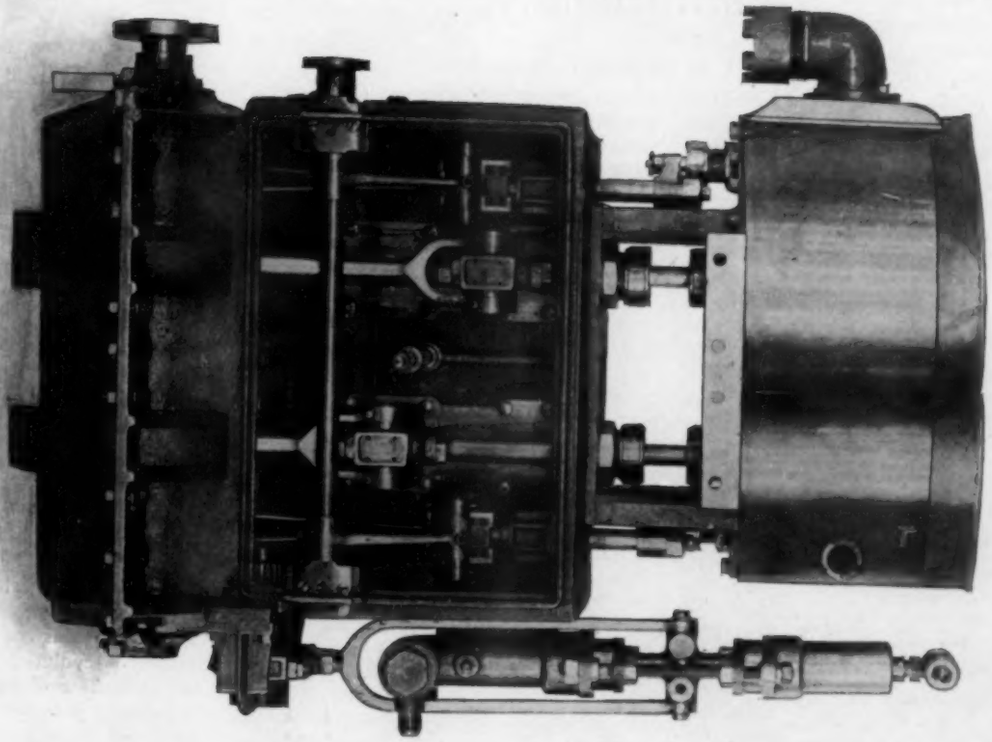


SECTIONAL ELEVATION OF MORGAN COMPOUND AUTOMOBILE STEAM ENGINE.

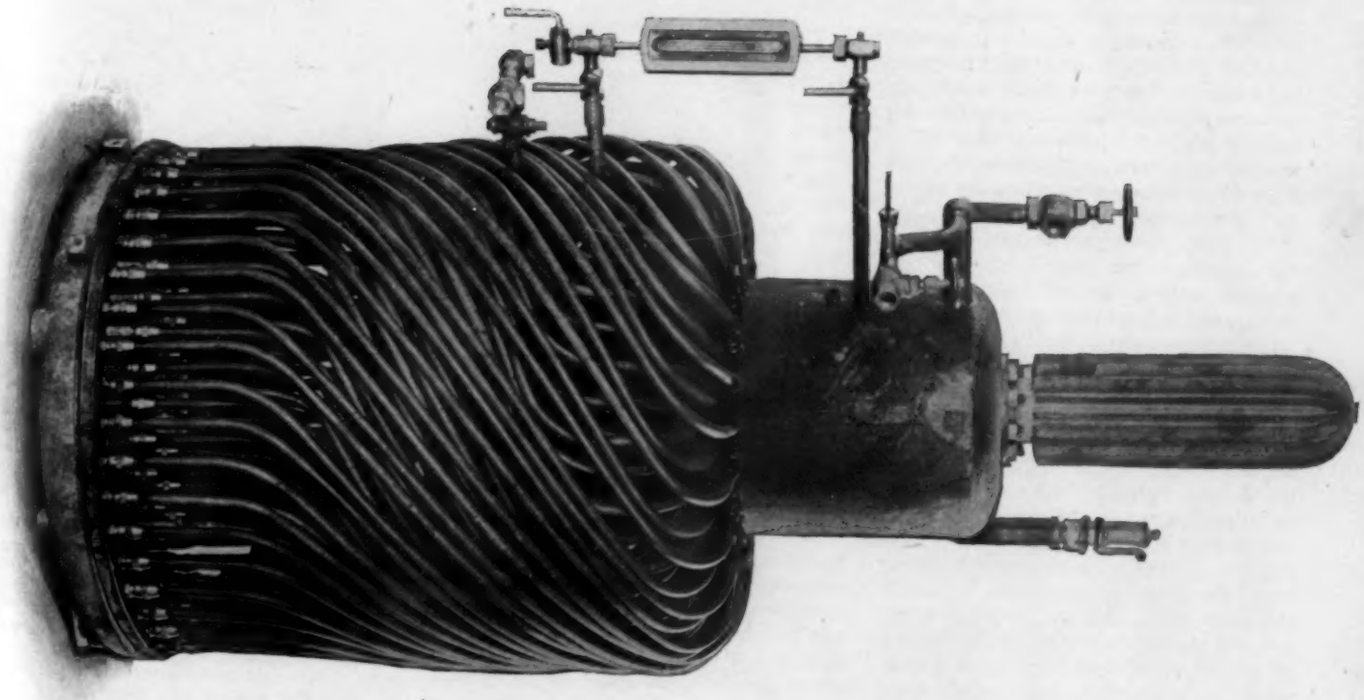
Colorado Springs, Col., is becoming a Mecca for western automobilists. About 50 vehicles are now owned there, valued at about $100,000. One of the recent additions to the number was a 20 horse power Rochet-Schneider car for C. M. MacNeil. Henri Fournier is expected to appear at an automobile race meet to be held late in summer. Influential citizens of Colorado Springs are trying to secure the building of a boulevard from Canon City to Denver via Colorado Springs. Every foot would be in full view of the Rockies and with the fine dry roads and bracing air of the plateau it would be an ideal automobile course.

President W. A. Dannat, of the Society of American Painters, of Paris, declares that automobilism is responsible for decreased public interest in fine arts. Its excitement attracts young men away from the brushes and paints of the studio to the open air. He admits that he has taken to the automobile himself and enjoys it.

MORGAN TUBULAR BOILER WITH OUTSIDE CASING REMOVED.



MORGAN COMPOUND ENGINE FOR STEAM TRUCKS.



MORGAN TUBULAR BOILER WITH OUTSIDE CASING REMOVED.

Marching Toward Simplicity in Automobile Construction.

BY A. R. SENNETT.

Speaking to the Royal Automobile Club of Great Britain and Ireland, on February 27, the well-known engineer and electrician, A. R. Sennett, who has been practically and theoretically connected with automobilism in England since the beginning of the movement, gave a synopsis of the evolution which has taken place. Some of his remarks met with opposition from the audience, but the extracts presented herewith seemed to be generally approved by the interested listeners. Substantially in his own words they were as follows:

COMPLEXITY SANCTIONED BY FASHION.

Biologists have taught us beyond a shadow of a doubt that evolution in animate mechanism is invariably brought about by and indeviably follows the exigencies of changing conditions. It is not subject to spasmodic progress nor to retrogression due to fallibility on the part of the designer; nor is it in any way swayed by fashion. If, on the other hand, we closely study evolution in inanimate mechanism, we shall always detect unnatural fits and starts, inutile phases, unprofitable changes, and time-wasteful reversions to previous types.

I remember a remark of George Robert Stephenson *apropos* in this regard. He said, "Half an engineer's life is spent in undoing that which he ought never to have done." Put into other words, try as he may to avoid it, the engineer invariably gives to the primary forms of his mechanism a complexity he should never have done, and then spends years in the mere process of simplification.

The modern automobile has now happily arrived at that state in its evolution when it is shedding the scales of complexity, and a consequent appreciation has set in in a manner destined to last.

The course of development has not proceeded so naturally as it usually does in matters mechanical—as, for example, in regard to the railway locomotive. Here the engineer strove to the utmost extent of his own lights to fulfil the exigencies to which I have referred, being in this entirely unhampered by any extraneous pressure. With the automobile things have been different; there have been such things as fads. The fact that one manufacturer has been successful with one type of vehicle has caused the untechnical to think that *per se* must be the correct type; and lastly, the influence of fashion has made itself felt, and this to the prejudice of equally meritorious vehicles which, however, have not conformed to the fashion of the hour.

The change speed gear is, without doubt, the least satisfactory functionary of the automobile. It is also one which gives rise to the greatest surprise when we reflect upon the enormous amount of cerebral force and monetary expenditure, only to find that practically evolution in its regard has progressed not one iota.

Two of the first gear-driven vehicles—the Panhard and the Peugeot embodied the device—still almost universally prevalent—of a train of toothed wheels sliding into and out of gear laterally. This train balladeur, as the French call it, is supposed to have been invented by the late Monsieur Levassor. Such, however, is not the case, for it was invented for use upon a steam carriage by an English engineer, whose name is, I think, not entirely unknown—James Watt. Watt's original sketch is still in existence, and and is most interesting, for it is precisely the so-called Panhard gear, and even shows the method of lubrication by drilling a hole longitudinally through the shaft, and leading the oil out by lateral holes as required.

Levassor, I believe, tried other expedients, including friction, and no one was more dissatisfied than he with his change speed gear. I believe his own exclamation was "C'est brusque et brutal," but he added, and herein lies the crux of the whole matter, "il marche." This miserable compromise for a gearing of variable ratio does, as he said, work with more or less satisfaction, but always with a fair degree of reliability, and hence its continuance to the present day. Despite the labor which has been fruitlessly expended upon the search for something better, I trust designers will not grow faint-hearted, for had we but a better change speed gear, and did designers but give greater attention to the silencing of their motors, the modern automobile would make far more rapid progress in the appreciation of the general public.

What would be the best form of change speed gear, and what has the future in store in this regard, are questions we might well ask ourselves.

It is not paradoxical to say that the best form of gear is "no gear at all." I do not, however, suggest that that is the solution of the problem the future has in store, because I feel that this is rather a greater step than is necessary. But what I do feel is that in the near future the brusque et brutal change speed gear will be entirely superseded by the substitution in its place of a simple half speed, or, better still, a lower ratio gear, in which the epicycle principle is embodied, and no positive disengagement of teeth resorted to.

The Americans so far are well behind us in everything regarding common road automobilism* with the one exception, that they have in many instances suppressed the Panhard gear, but they have done this somewhat inadequately by failing concurrently suitably to increase the power of their motors. Therefore in regard to change-speed mechanism there is practically nothing important to chronicle.

PRESSED AND COMPOSITE FRAMES.

For weighty vehicles I think there can be no doubt that hydraulically pressed up frames produce the best "engineer's job." A plant is now at work in France, and I understand one is being got ready on our side, so that shortly they will be procurable.

Perhaps the most scientific form of frame yet introduced is the aluminum rectangular—or "box girder"—reinforced by a core of ash made use of by Messrs. Charron Girardot et Voigt, and the steel one of similar construction made use of by Messrs. Maudslay on our side.

HONEYCOMB COOLERS NOT IDEAL.

Time will only allow me to very inadequately touch upon that very important organ of the automobile—its motor. In regard to this no startling or radical phase of evolution has presented itself, but there is evidence of healthy progress, the motor of to-day being a far more reliable servant than its progenitors. Quite recently it has entered upon a change which I have not the slightest doubt will prove a serviceable and lasting one. I refer to mechanically-actuated admission valves; other notable modifications are improved methods of cooling and of increasing the effective range of its speed and par suite power. With regard to the former—the cooling—the latest device consists in discarding the ventilating louvres which had come to be an integral of the bonnet and enclosing the motor

* Readers of THE AUTOMOBILE will, of course, not make the mistake of supposing that Mr. Sennett's remarks, though here reproduced, are above criticism. One American car with which he ought to be acquainted, as its counterpart is made at Coventry, Eng., has a Crypts gear and more horse power per pound of machine than the majority of Panhard machines (except the racers). A number of change-speed mechanisms were exhibited in the cars at the New York and Chicago shows, in which the clutches were operated in oil baths and one or two in which the sliding gear and the epicyclic gear principles were cleverly blended. Undoubtedly the tendency toward higher power is as pronounced in the United States as elsewhere, but probably it has little to do with the methods of gear change. In fact, the connection between power and gear change system, suggested by Mr. Sennett, is not very clear. At another point the lecturer shows some degree of unfamiliarity with recent developments in this country, when he refers to an "interesting recrudescence" of air cooling in one modern automobile. We do not know to which car he refers, but if his practical and theoretical experience extended to American work, he might have mentioned at least three "interesting recrudescenses."—ED.

within it hermetically, and aspirating air into this closed chamber by means of a centrifugal fan. All this represents common sense progress, but in connection with it we detect the imprint of the faddist. The cellular—or so-called "honeycomb"—cooler by means of which the circulating water is divided up into thin films constitutes a correctly scientific process of refrigeration analagous indeed to certain other cooling processes, such as that of beer. But among things to be avoided on motor cars are joints. Now the up-to-date cooler may be said to be built up of joints, a vast expanse of soldered joints fairly difficult to make in the shops almost impossible to remake on the road. The ideal water cooler should only have two joints, those of the induction and eduction pipes. Now the difference in weight of a well-designed cooler practically free from joints and one dependent upon much soldered jointing is negligible in regard to ordinary vehicles. I should like to point out here that my remarks anent water cooling and motors are intended to apply only to ordinary cars, and not to racers, in connection with which it is, of course, legitimate to employ any means of weight reduction and speed acceleration likely to bring one first to the winning post. For the system of placing the fan behind the motor instead of immediately behind the cooler, I have nothing but condemnation. It seems to be like soldering one's watch-case and debarring oneself the opportunity of adjustment and inspection whilst at work, for if the motor be run with the bonnet removed a few minutes will suffice to overheat it.

It may be mentioned in regard to cooling that for some time endeavors were made to rely upon air cooling through the instrumentality of fans, but it was found that the falling off in power after running some miles—due to overheating of the cylinders—was serious. This, of course, is the case to a greater degree when valves actuated by asperation are used than when mechanically operated ones are employed; nevertheless, if we consider the matter physically—air being such a very bad conductor of heat, and its thermal capacity so low, that great quantities have to be used for a small amount of refrigeration—one is led to feel, whilst still keeping a watchful eye toward simplicity, that water cooling, especially now that the later coolers enable us to carry so small a quantity, is likely to prove serviceable for some time to come. We find an interesting recrudescence of air cooling, however, in one modern automobile.

A NEW IGNITION WIRE.

Ignition troubles have been recently considerably reduced, and common sense modifications now being effected—such, for example, as placing the commutators upon the dashboard, more liberal contact surface in them, and suitable means of adjustment for wear in the contact pieces—give promise of still greater efficacy in this very important matter.

But I am sorry to say, although we must all feel that this is an important matter, that makers have not given the pigmy electric installation entailed anything like adequate attention. In the first place the switches, the commutators, the contacts and the binding screw arrangements are too often of the commonest description and roughest workmanship, bringing about many a contretemps quite avoidable. Makers, moreover, seem to think that in no matter how slipshod a fashion the wiring is carried out, it will be equally efficacious. This is far from being the case; it is, in fact, worthy of considerable attention, and as far as my knowledge goes, only two engineers, Mr. Crosland Taylor, the managing director of the British Insulated and Helsby Cable Company, who has designed the special cable which I hold in my hand, and Mr. Shipp, of the same company, who has carefully investigated the conditions obtaining and the proper electrical system upon which such wiring should be carried out, have given the subject anything like adequate attention. In Mr. Taylor's cable the core consists of a central steel wire enclosed within six copper wires, wound upon it to form a seven-stranded core. Upon this core is wound a closed spiral of thicker tinned copper wire, forming a helical sheathing precisely the same as we see upon the wires of the bass notes of a pianoforte. It will be obvious that, in the event of the inner strands being broken by vibration or other cause, the spiral sheathing being extensible, electric continuity will still be maintained.

THE WIRE A CONDENSER.

Now, as to the system of wiring, Mr. Shipp's investigations led him to infer that good effects would accrue if the cable were made in such wise as to form an electrical condenser. For this purpose, as you would see, it is enclosed in a very heavy lead sheathing, which, it is very obvious, must by induction play the part of one set of plates in a condenser. The effect of this is, I am informed, is that such condenser action strengthens—or, as we motorists usually say, "fattens"—the ignition spark. Whilst the enhanced electromotor force permits of a greater length of spark gap being used, conversely it enables a partially exhausted accumulator to perform work which it would otherwise be incapable of. In the ordinary system of wiring care should be taken to insulate the cable from contact with metal. In this system the lead sheathing should be put as much as possible into metallic contact with the framing of the vehicle, and it possesses the further advantage that the insulation, so prone to be damaged by petrol and oil, is efficiently protected within its leaden pipe. In wiring, the lead should be stripped off for a distance of about 4 inches, not only to give flexibility, but—the braiding being also removed—to prevent creeping from dampness.

OLD AND NEW WAYS OF DELIVERING TYPEWRITERS.—See page 373.

Cheri's and Tattersalls', the big horse markets in Paris, are beginning to feel the effects of the growth of the automobile industry in the falling off in attendance and amount of sales.

Fireproof Automobile Barn of Iron and Asbestos.

Angle iron and asbestos are the materials now being used in the construction of houses especially designed for private automobile barns that are both weather and fireproof and easily erected or taken down for removal. These houses are plain, rectangular affairs with concrete floor and peaked roof, and are expansible to any desired size by the addition of extra panels to the sides and ends. The panels are made of angle iron frames covered with asbestos "building lumber," and the house is shipped in sections ready to be put together by the use of only a monkey wrench and screwdriver.

The general form of the house, the details of construction and the dimensions are clearly shown in the accompanying working drawings of a house 10 feet square and 7 feet high in the walls, with a peak of 1 foot 4 1-2 inches in the roof. This has one window 2 feet square in each side and a double door in one end. The panels are of different sizes according to the particular place they are designed to fit into, from 1 1-2 feet wide and 7 feet high to 3 1-2 by 7 feet for the sides and ends and corresponding sizes for the roof.

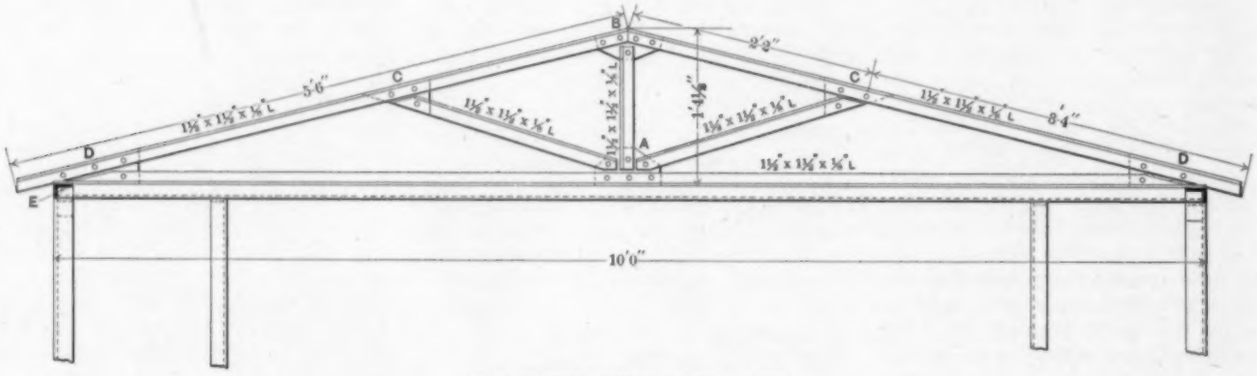
The end panels are braced with diagonals, and the roof panels are trussed, bolt plates being used to secure the roof panels and truss pieces, while the side and end panels are held together by bolts through the meeting flanges of the angle iron.

The cement floor, which is laid in place on the site of the house, is designed to slope toward the middle of one end, where a drain pipe is provided, thus permitting washing of the vehicle in the stable. The angle iron sills are of 2-inch by 2-inch by 1-4-inch material, anchored to the concrete, and the panel frames and truss braces are of 1 1-2-inch by 1 1-2-inch by 1-8-inch angle iron. The so-called "asbestos building lumber," with which the side and roof panels are covered, is unlike anything previously used in automobile houses or automobile work. All parts of the house are secured together by iron bolts and screws, necessitating the use of only a monkey wrench and screwdriver in the hands of any person of ordinary intelligence and mechanical aptitude, as full directions with drawings accompany the sections of the house when shipped.

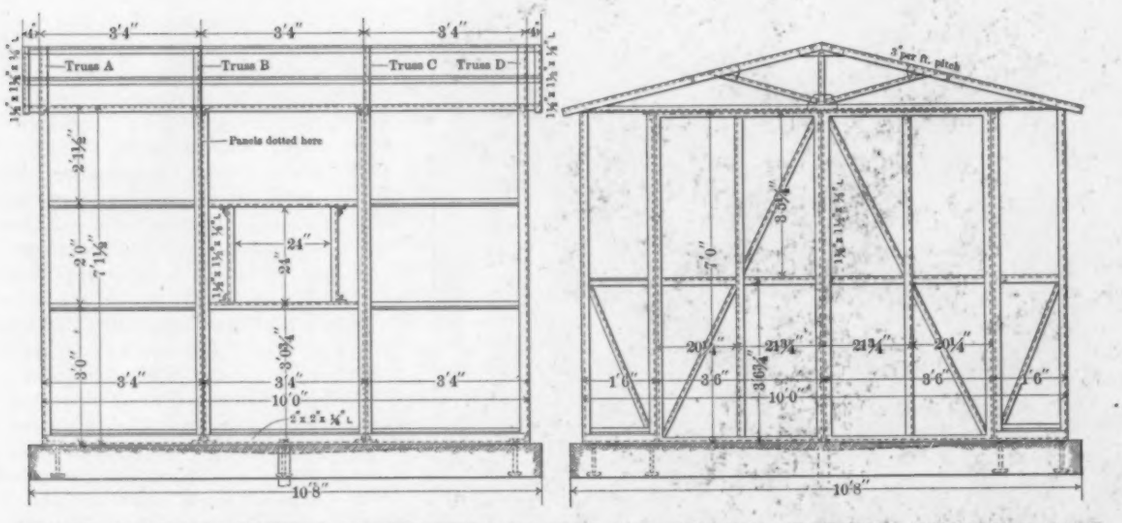
The absolutely fireproof and indestructible nature of the structure is apparent. In addition to relieving the owner from the expense of paying the usual high rate of insurance on frame buildings used as automobile houses, its use minimizes the danger of fire damage to the automobile housed within it.

The feature of expansibility by the simple addition of side panels is one of no minor importance, as the owner of a little runabout can secure additional sections at slight expense and enlarge his stable easily at any time he wants to dispose of his machine and purchase a larger road wagon or tonneau car. The standard sizes as made are: 10 by 10 by 7 feet, 10 by 13.4 by 7 feet, and 10 by 16.8 by 7 feet. The simple construction and ease of manufacture add to the foregoing qualities the further desirable feature of low cost.

One of these houses was publicly exhibited for the first time at the recent Philadelphia automobile show, where motorists manifested much interest in it. The construction is protected by patents owned by the manufacturers, the Keasby & Mattison Co., makers of asbestos building papers and other fireproof specialties, at Ambler, Pa.

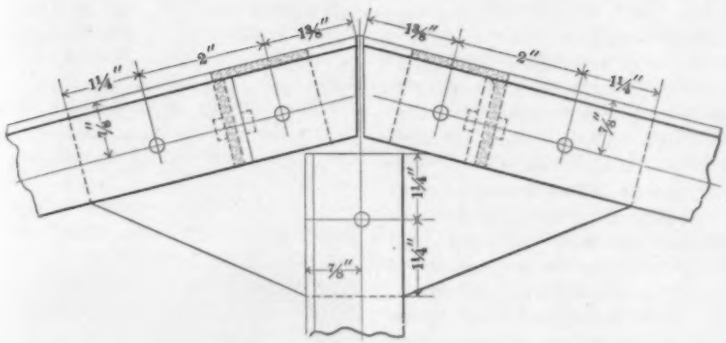


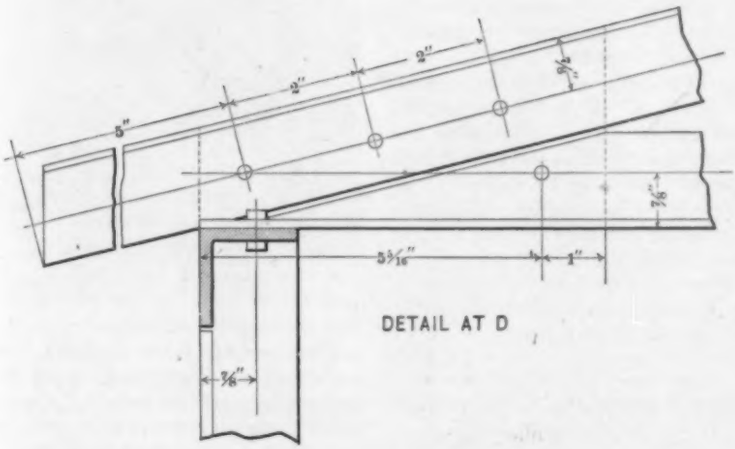
(For enlarged details see opposite page.)



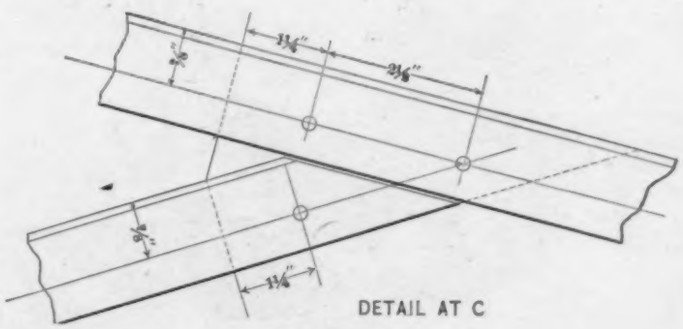
OUTLINE DRAWINGS SHOWING CONSTRUCTION OF IRON AND ASBESTOS FIREPROOF AUTOMOBILE BARN.

DETAIL AT B

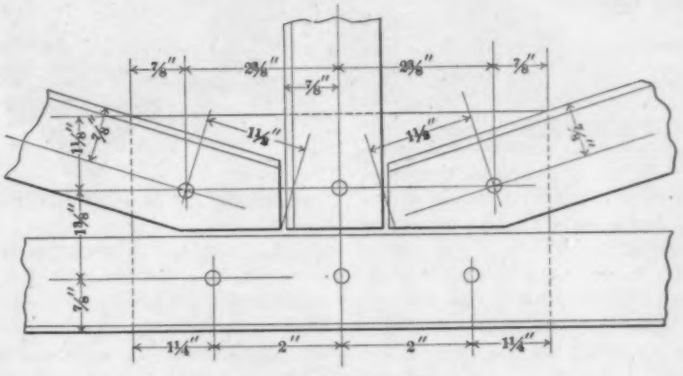




DETAIL AT D



DETAIL AT C

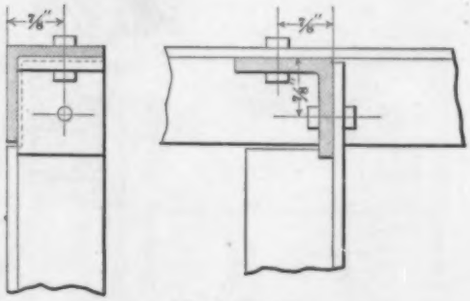


DETAIL AT A

CONNECTIONS OF STRUCTURAL MEMBERS OF FIRE PROOF BARN.

Automobile Displaces Porter for Typewriter Delivery.

When typewriters were introduced into the South the usual method of delivery adopted by the local dealer was to secure a strong negro, who would carry the machines from the salesroom to the place of business or residence of the purchaser. One negro could carry as many as three bundles or packages, one in each hand, and the third balanced on top of his head. The southern negro can "tote" articles in this way for long distances without rest

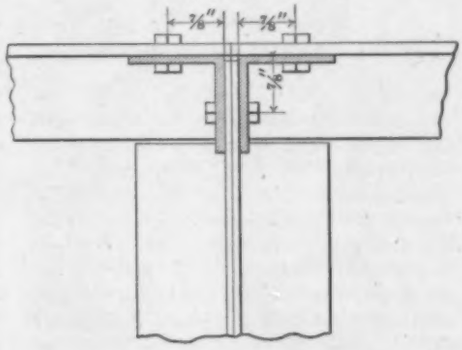


DETAIL AT E

or change. The habit is a relic of slavery days, when the master of the plantation, in an effort to get all the service possible out of all his slaves, made them use their heads as well as their hands and feet for labor.

But the new way of delivering typewriters in the South is by the ever-ready and tireless automobile. In the accompanying

DETAIL AT F

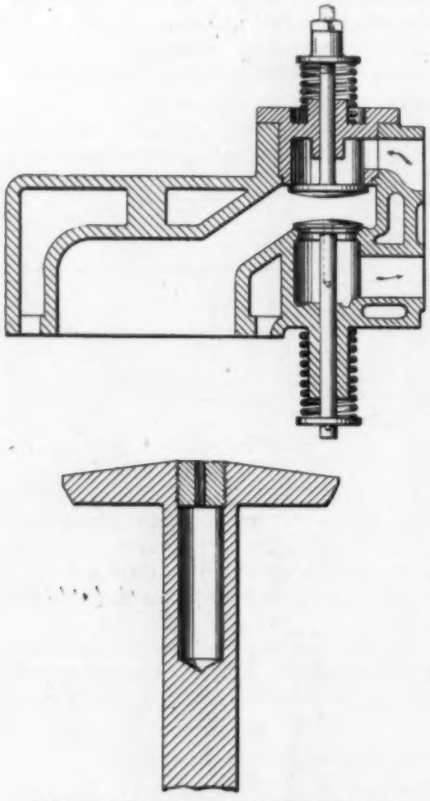


cut, on page 372, H. M. Ashe, agent for the Smith-Premier typewriter for Georgia, is shown in his runabout, with one of his clerks, while to the left is a typical Georgia "darkie" with three typewriters, one in each hand and one on his head. The automobile delivers the machines in one-fourth the time formerly required.

Automobile passenger service in Oberlin and Vermillion, O., and vicinity, on roads not covered by trolley lines, is to be undertaken by the People's Auto-Transit Co., recently organized with a capital of $25,000.

Supplementary Ignition Device Without Batteries.

An exceedingly simple device for economizing electric current in the operation of gasoline motor vehicles, and even better adapted for stationary motors, has been invented and patented by Joseph Tracy, of New York, and is shown in the accompanying illustration. The inventor merely



TRACY PATENT EXHAUST VALVE.

keeps a little of the exploded charge, under conditions that prevent it from cooling rapidly, and uses it for igniting the next charge. As soon as the motor has been heated up somewhat this small quantity of hot gas takes the place of the spark, which is therefore switched off, and automatically advances the ignition according to the speed of the motor through the mere fact that the more rapidly the motor works the less time is given the little ignition charge to cool off, and the earlier it will ignite the incoming mixture. Retarding of the ignition beyond the center position of the piston is not practicable with the device, however.

The means employed for keeping the ignition charge hot seem so obvious once the desired effect has been accomplished, that one wonders it was never thought of before. The little reservoir is produced by making the exhaust valve stem tubular in the portion nearest the valve and strangling the opening from this small cylindrical cavity by means of a perforated screw plug, as plainly shown in the illustration. To obtain the best results the cavity is also lined with asbestos, says the inventor, but this is not essential.

Being the hottest part of the engine at the end of the scavenging stroke, and being, furthermore, heated from the exhaust that remains on the outside of the valve, the valve stem is clearly the part best adapted to house the ignition charge.

The new charge drawn in cools every other part of the combustion chamber, but sweeps past the strangled opening to this cavity without affecting the temperature of its contents, and not till the compression stroke has again raised the temperature and prepared the mixture for ignition does the latter take effect.

As would be supposed, the device works best at uniform and rather high-motor speeds, but it has been found in practice that it is quite feasible, under ordinary traveling conditions as encountered on country roads, to rely entirely upon the device and save the electric spark for other conditions. And, as the arrangement is inexpensive and may be applied to almost any of the well-known automobile motors, it seems to constitute one of those little refinements which are likely to be generally adopted at least in engines in which the compression is not subject to frequent and radical variations.

Compact Automatic Carbureter

Compactness, simplicity, efficiency and convenience are leading characteristics of the float-feed carbureter shown in the accompanying engraving, which is a first sample after a design invented by C. M. Mohler, an expert brass worker of Kenosha, Wis., who has applied for a patent and just been allowed two of his claims. In this carbureter the float and feed or intake chambers are combined into one, instead of being made separate, as in other float-feed carbureters. The float cup has a central conical opening like a cake tin. The float surrounds this and opens and closes an inverted needle valve that controls the flow of gasoline from the pipe connection at the top of the carbureter into the float chamber. The conical central opening in the cup is bored through at the bottom for the passage of the gasoline into a fine feed nozzle standing centrally in this opening and reaching nearly to a level with the top of the fuel in the cup. The air to form the hydrocarbon gas is drawn in through the bottom of the vertical opening and, commingling with the gasoline as the latter leaves the nozzle, strikes against a spiral, perforated baffle plate in the transverse mixing chamber at the top of the carbureter, where the air and gasoline are thoroughly mixed before passing into the cylinder.

Immediately below the air inlet of the float chamber is screwed a cast brass cup into which is piped some of the hot exhaust gas from the engine. The air is warmed as it passes over the top of this cup, enabling it to take up the largest possible quantity of gasoline, while the gasoline itself is not heated and volatilized.

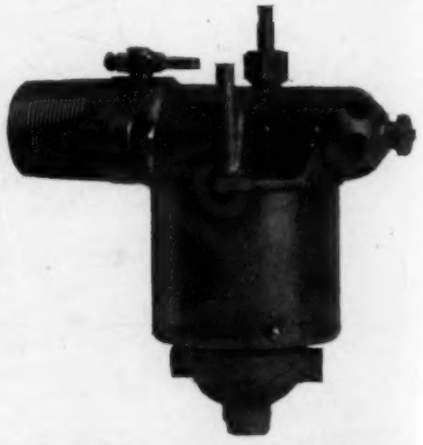
An automatic poppet valve, made of paper fiber for quiet action, is placed at the right hand end of the mixing chamber, with an adjusting screw for regulation, so that when running at high speed with the throttle wide open the engine can take in additional fresh air. The current from this is drawn straight into the cylinder, passing at right angles across the current from the float chamber and commingling with the latter around the spiral baffle plate in the mixing chamber.

A pivoted disc throttle similar to a stove damper is mounted at the inner end of the mixing barrel to limit the quantity of gas taken into the cylinder instead of the air as it enters the carbureter. This throttle has a loose fit so that it will not at any time cut off the gas supply entirely and stop the motor.

A tube connection is provided at the top of the float chamber by the side of the mixing barrel for the attachment of a rubber tube having a hand bulb at its other end, to be used for depressing the float and flushing the carbureter.

There are but three castings, all simple, and few other parts, and all are held together by screw threads or screw bolts. A particular feature is that every part is accessible without disturbing the connections or removing the mixing barrel from the engine. The float cup can be unscrewed by hand and the needle valve gotten at, and the poppet valve with its caging can be unscrewed and removed.

It is the intention later to make the float cup of glass and to make other



EXTERIOR OF MOHLER CARBURETER.

slight changes for refinement, but the principle and general construction are considered most satisfactory. One of the Mohler carbureters has been used since last September by G. W. Bennett, of Thos. B. Jeffery & Co., who asserts that he prefers it to the Longuemare, which he previously used. The new carbureter

is not yet in the market, the inventor now being engaged in turning out half a dozen to be tested thoroughly on the machines of a few friends. Manufacture for market will begin in a short time, however, or as soon as it is found that the performance of the samples realizes expectations.

Eight-Cylinder Ignition.

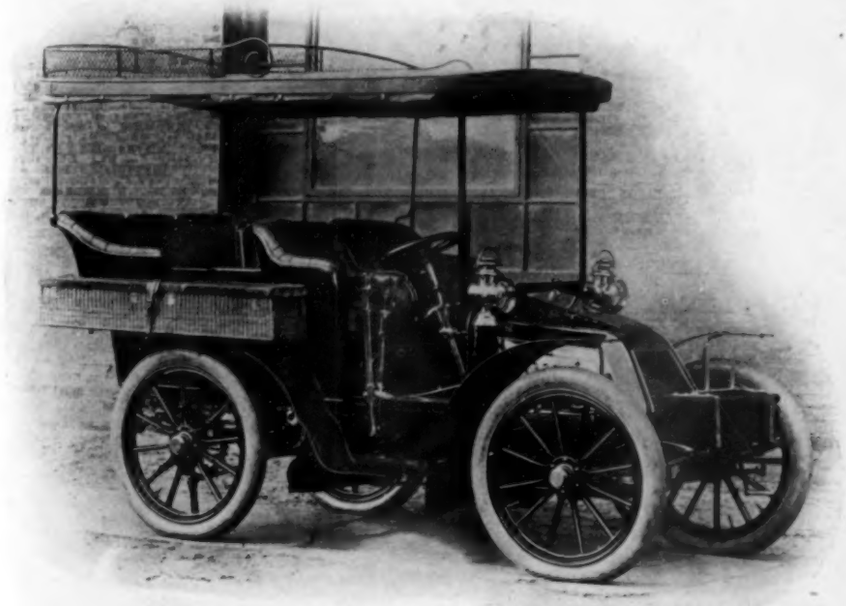
In the eight-cylinder French C. G. & V. gasoline engine for direct drive, which

TWO-SEATED OLDSMOBILE.

was exhibited at the late Paris show, and to which we have frequently referred in these pages, a special ignition system has been adopted. By this a single coil serves all of the eight cylinders and the number of wires is reduced considerably. The system is described by a French authority as follows:

The method used is illustrated in the accompanying design applied to a two-cylinder motor, but can be extended to any number of cylinders, as will be readily seen. The current coming from the primary or storage battery passes through the interrupter *J* to the primary core of the induction coil *B*. From here it goes to the distributer *D*, which has two contacts *t* and returns to the earth *M* by the movable contact piece which is moved by the two-to-one shaft and consequently permits, once for each shaft revolution (of the two-cylinder motor), a primary current to pass into the coil and generate a secondary current, which it now becomes the object to send to that plug in which it is wanted and not to the other one. This is the function of the second distributer *E*, which has as many contacts *c* as there are spark plugs, and in which the movable contact piece is also actuated by the two-to-one shaft. The secondary current is produced exactly at the moment when the movable contact piece arrives in front of each contact corresponding to one of the plugs, and it can therefore pass to only one of these at a time. So as to obtain the benefit of the "outside spark gap," of which so much has been written lately, the movable contact piece does not really touch the various contacts, but moves within 1-2 millimeter of each of them, and this gap serves the same purpose as when it is at one fixed point in the secondary current, permitting the spark to jump between the electrodes inside of the cylinders, even when the plug is sooted.

This arrangement considerably reduces the voltage of the secondary current, but it is stated that it works very well with a coil furnishing 12,000 to 15,000 volts to the open circuit.



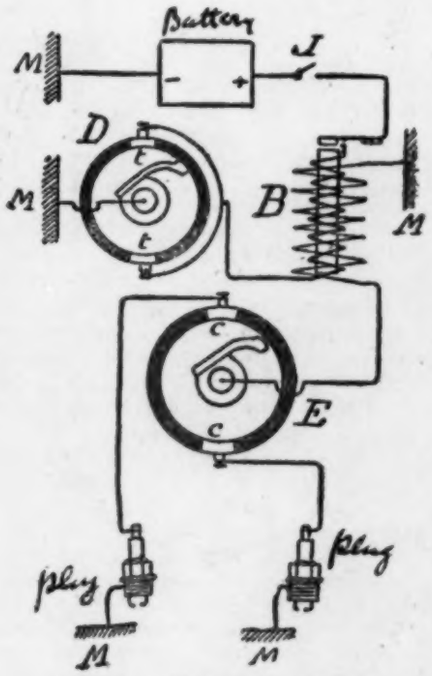
KING OF THE BELGIANS BODY CAR FINISHED IN TUFTED PIGSKIN.

A Runabout Attachment.

The modification of the body of an Oldsmobile, shown in the accompanying reproduction of a snapshot photograph, has been carried out by F. S. Hodges, of Jacksonville, Fla. It consists in the addition of a rear seat in which the passengers face forward, as this is for most people a pleasanter way to ride than dos-a-dos fashion, in which the passengers ride backward. In Mr. Hodges' modification the rear seat is elevated sufficiently so that its occupants can get a clear view over the heads of those on the front seat. By the attachment of a step to the underbody the entry to the back seat is made very convenient.

Novelty in Car Finish.

The first car finished in tufted pigskin throughout, produced on this side of the ocean, was exhibited at the recent Garden



C. G. & V. SPARKING SYSTEM.

show, and is shown in the accompanying engraving. This car is owned by R. Y. Cook, of Philadelphia, and is an American C. G. & V., 15 horse power touring car, completely equipped with baskets, leather portfolio, tool bags and other accessories. Pigskin has been used considerably abroad for car upholstery, and for this purpose a thin quality of hide is required which is not at present produced in this country, but is imported from France. It is, of course, very durable, and is of an attractive color when new.

The mercury-vapor electric lamp invented by Peter Cooper-Hewitt, a member of the A. C. of America, has been found adapted for transforming an alternating current into a direct current by reason of the peculiarity that it transmits current only in one direction. It is expected that it may be employed in the charging of storage batteries from an alternating current wire.

Automobile Tours in the Philippines.

Editor THE AUTOMOBILE:

Sir:—Perhaps I can tell you some- 'n teresting stories concerning automobiling in the new possessions of America in the great Pacific Ocean. The writer has been in these islands for two or three years, and during that time has not only watched the progress of the advancement of cycling and automobiling interests, but has taken an active part in them. Automobiling in these islands is not all that could be wished. Your first observation of an automobile in the islands is when you leave the transport at Manila. In Manila there is a goodly number of horseless vehicles, in good running order, in operation side by side with the ancient types of caribou carts. One sees not only the solid wood-wheeled vehicles of the natives, but even draft sleds with wood runners being hauled over the rough roads. The contrast is quite remarkable, but all goes to illustrate the general progress of things

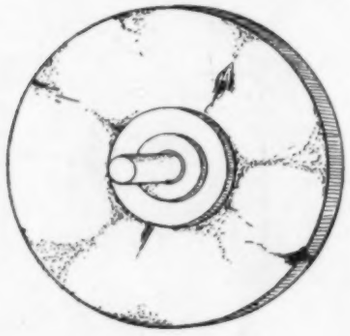


FIG. 4.

in the carriage and wagon line in this country. Of course automobiles are costly in the Philippines, and their use is restricted to the rich and to those persons who make a business of renting the machines at so much per hour.

Then you observe later that automobiles are common in Iloilo, the second city of importance in the islands. The motor carriages are finding their way also into places like Jolo and Zamboanaga. I think in a few years the horseless vehicle will be popular in these islands.

OUR TENTAGE.

I can best illustrate my points concerning automobiling in the Philippines by describing a few tours. We left Iloilo one morning and rode through Molo, Tigbauan and Leon and there camped. Fig. 1 is presented to give an idea of our practice of erecting a tent in this country of sudden winds and storms and earthquakes. We had one earthquake here that nearly shook the machine over. The custom of erecting the tent strongly consists in putting up additional bars of bamboo poles as shown and securing the ropes to these.

It sometimes happened that no tentage was at hand for this purpose, and it then

FIG. 1.

became essential to rig up something. In Fig. 2 is shown one of the methods we employed. It involves only the use of a few pieces of bamboo, covered with

FIG. 3.

nipa. Quite often we threw up one of these protections for the night and it served all purposes so far as keeping out the wind was concerned. The rains were

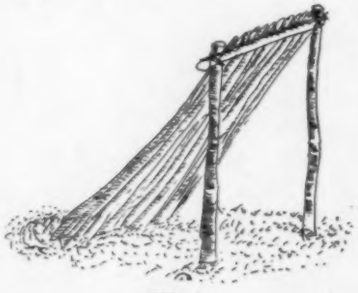


FIG. 2.

likewise prevented from getting at us full force.

Field cooking is one of the factors of Philippine touring, because you cannot

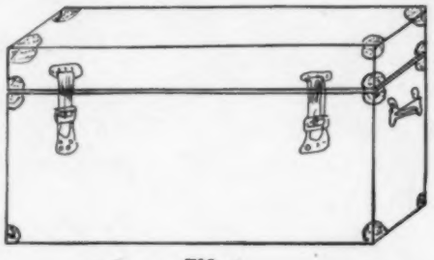


FIG. 6.

expect to find road houses very often. We often stopped alongside the road for a meal and secured the services of a native to start a fire in the earth by digging an excavation as shown in Fig. 3. The firewood is placed in this excavation and lighted. The heat concentrates within the hole and rises to and through the kettle or other substances above. This is a very cheap and ready way of cooking in the field. We often secured very good results; I had buscuits baked this way by arranging an empty can near the fireplace, this pan containing the biscuits.

BAD PLACES FOR REPAIR WORK.

What concerned us more than anything throughout the entire period of automobiling in the islands was the lack of proper facilities for making repairs. Although we carried parts of our machine in duplicate and triplicate, we frequently found it necessary to delay in places for days while one of the native machinists laboriously worked down some new part from a solid piece of metal, to replace a broken one. The wheels of the country differ so vastly from anything like the motor wheels that the

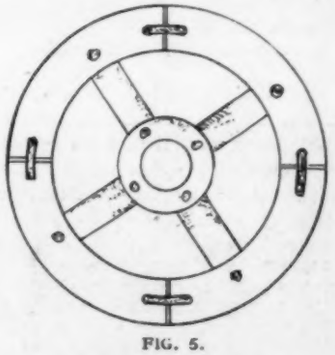


FIG. 5.

difficulty of getting parts of wheels is everywhere felt. In Fig. 4 there is shown one of the common patterns of solid wood wheels of the country. The smiths of large places like Manila, Iloilo, Cebu, Jolo and the like are sufficiently advanced to do some good work in the wheel line, but the native wheelwrights in almost all other places are poor workmen when it comes to constructing or repairing modern wheels. Fig. 5 shows one of the spoked wheels of the country. These wheels are too clumsy and bulky to be of effective service. The wood is very hard and dense, and the weight of the wheel excessive.

NECESSARY KIT.

We found it best to carry a complete kit of tools with us, including taps and dies, several kinds of drills and stocks, chisels, saw, hammer, and varied kinds of metal and woodworking tools for repair service on our machine. Fig. 6 illustrates our kit chest.

FOOD ON TOUR.

The food question was not a serious one, because we were able to buy meats, breadstuffs, fruits and general supplies almost everywhere along the line. We were

not compelled to weight the carriage with much provision.

IN THE MORRO COUNTRY.

After touring Panay Island we secured transportation to Zamboanago, Isle de Mindanoa, P. I., on a steamer. From Zamboanago we went to the lake country of the isles by way of Malabang, and

NATIVE COOKING MEAL.

there astonished sultans, datos, rajahs and others with the machine. This part of the country is the one in which the rebellious Moros recently fought with the American troops. The friendly Moros seemed awed at the sight of our machine. They made way for it at all times. We had several chances to change the machine

A SOLID WOOD WHEEL.

into much more gold than it cost, because some of the dattos wanted to buy, also some officers of the army. I think before long there will be quite a call for motor cars in these islands. The roads are in the most part suitable for motoring.

AN EX-SOLDIER.

Isle de Mindanoa, P. I.

Position of Air-Cooled Motor.

Editor THE AUTOMOBILE:

Sir:—I should like to have you tell me, through your paper, if an air-cooled motor of four small cylinders could be used in a motor-front machine, with the engine placed lengthwise under a regulation bonnet such as used for a water-cooled engine. Could you use a shaft drive with sliding gear transmission? Could an engine by cooled enough by fans under the bonnet? G. W.

Manitowoc, Wis.

As a very abundant current of air, even more than simple radiation to surrounding objects, is an absolute necessity to the air-cooled motor, it is obvious that any disposition of cylinders by which one acts as a screen for another is prejudicial to successful operation. Doubtless various arrangements of fans could be contrived to deliver air upon the cylinders from each side, but at an obvious sacrifice of simplicity and accessibility for the motor proper. It should be remembered, too, that it is not enough to devise an apparatus which will discharge air upon the motor. The air must be gotten rid of as well, and this must be done without interfering with the currents of fresh air from the fans. We are not prepared to say that the thing is impossible, but it will certainly require ingenuity and careful study. Perhaps as good a plan as any would be to deliver the air downward on the cylinder heads, and make the ribs vertical or sloping instead of horizontal, to disperse the air about the base of the cylinders. Assuming the cooling problem solved, any ordinary transmission system could be used.—Ed.

Carburetter Was Clogged.

Editor THE AUTOMOBILE:

Sir:—The value of small things in running an automobile was recently proved to me with so much force that I believe it will be of interest to other owners to know my little experience.

I own and have run all through the season a runabout with an upright motor. About a month ago I noticed that the motor was occasionally skipping, and, of course, I was not getting the power that I ought. Every evening after coming in from my ride I would spend a half hour or more looking for the seat of the trouble. Tried the spark. Put in a new battery. Weakened the intake spring and did many other small matters. Finally I concluded that there was something wrong with the motor itself and took it off and sent it to the agents for overhauling. They returned it with word that it was all right with a new crank pin bushing they had put in.

I placed the motor back in position, with the help of a friend who had some little knowledge of gasoline motors. In taking it off in the first place I had to disturb the relative positions of the gasoline and air levers on the carbureter. When we had put everything back and started in to connect up the carbureter I found that I had neglected to measure just the exact difference of the original positions of these two levers—they were connected by an adjustable spreader and were operated as one from the seat. The only thing left to do was to position them as near as I could remember. We started the motor. It ran spasmodically, as before, but my friend said it was perhaps due to the fact I was using too much gasoline in the mixture, told by the heavy pungent smell of the exhaust.

He kept changing the proportions of the gasoline and air until he got the right mixture, without a heavy odor from the exhaust and the motor ran well on slow speed, but would lay down the minute the spark was advanced. He satisfied himself that the spark was working all right, likewise the inlet valve, and then asked how long I had used the carbureter—it was of the float feed kind—without looking into it, when I told him it had never been apart. Without another word he had that device of the machine and in a few minutes showed me a teaspoonful of stuff he had removed from the carbureter and its feed pipe.

In half an hour he had discovered and remedied what I had spent hours on in a month or more of hunting. Hereafter I am going to strain through a silk handkerchief every drop of gasoline I put in my tank. If any of you other readers are having trouble with loss of power on a first-class motor, probably it isn't leaky piston rings, but just a dirty carbureter. And strain the gasoline.

Philadelphia. CARBRET.

Horse Power Wanted.

Editor THE AUTOMOBILE:

Sir:—I am a subscriber to your paper, and write to know if you will kindly give me the horse power of a four-cylinder gasoline motor of the following dimensions: Cylinders, 4 inches by 5 inches; clearance space, 20 cubic inches; balance wheel, 80 inches; revolutions, 1,000. I have tried several formulas, but each one seems to give a different result. A. W. P.

Wheeling, W. Va.

At 1,000 revolutions per minute, the above engine should develop not less than 18 horse power, and with an efficient carbureter of modern design you might get from 20 to 22 horse power.—Ed.

Horse Power of Marine Engine.

Editor THE AUTOMOBILE:

Sir:—Will you please advise me how I can find the horse power of a marine gasoline engine? The engine is of the four-cycle type and has two cylinders. The length of the stroke in each is four inches. The diameter is 9 1-2 inches. The flywheel is 34 inches and turns about 300 revolutions per minute. G. H. W.

Alameda, Cal.

The above engine should develop from 25 to 28 horse power at 300 turns per minute. As the proportion of stroke to piston diameter is not the best for efficiency, probably you will do best to be satisfied with the lower power.—Ed.

James H. Decker, press agent for Lew Dockstader's minstrel show, has secured several automobiles for use in the street parades which the minstrels usually give before each performance in the towns visited. The minstrels will no longer have to trudge afoot, and Mr. Dexter expects to create a sensation with the novelty..

Model Automobile Law In Effect in New Jersey.

Result of Combined Work of Automobilists Supersedes Previous Obnoxious Scovel Bills—Sponsors for Equitable and Scholarly Act Are Solicitous that It Be Observed.

An earnest effort to overcome the antagonistic feeling entertained toward automobilists by residents of New Jersey as a result of the excessive speeding that has been too much indulged in on the magnificent roads of that State in the past is being made by Winthrop E. Scarritt, as president of the Automobile Club of New Jersey. Circular letters were sent out by him last week to the automobilists of the State appealing to each man individually to not only observe the letter and spirit of the new automobile law that became operative last month upon its signature by Governor Murphy, but also to help remove the stigma against motorists by using his influence to induce others to refrain from infractions of the statute and show every consideration for the rights and feelings of other users of the highways.

Solicitude for the success of the new measure, through the hearty compliance of all motorists with its provisions, is felt by the president of the New Jersey Club because it is a substitute measure, prepared by the club members and other interested motorists, for two previous bills that were so objectionable that representatives of the automobilists sought a conference on the subject with Assemblyman Scovel which was held on February 28, and resulted in the present bill being drawn up. Despite opposition in the Legislature, the bill was passed as drafted with but one amendment, which struck out a provision that any community might vote for increased local speed. This was considered of no importance, and in the passage of the bill the motorists feel that their rights have been conserved.

REGISTRATION AND LICENSE FOR $1.

The new law provides for the issuance of licenses for the operation of automobiles upon payment of a fee of $1 and registration of the vehicles, and in conformity with this the Secretary of State at Trenton has had applications for licenses printed in blank, and will furnish one or more of these to any applicant, together with a copy of the new law. Fac-simile reproductions of this application are shown herewith, one plate showing the blank for description of the vehicle for purposes of registry, and the other the blank for the sworn declaration of the owner of his competency to operate it.

Motor bicycles and traction engines are included in the definition of "motor vehicles" as contained in section 1 of the act, which states that "this act shall be construed to include automobiles, locomobiles and all other vehicles propelled otherwise than by muscular power, excepting the cars of electric and steam railways and other motor vehicles running only upon rails or tracks."

NON-RESIDENTS INCLUDED.

The second section makes it compulsory upon non-residents as well as residents of the State to register their machines and secure operators' licenses, requiring each to file with the Secretary of State a sworn declaration that he is "competent to drive the vehicle for which application for license is made, and a written statement containing the name and address of such owner, together with a brief description of the character of such motor vehicle, including the name of the maker and the manufacturer's number of the motor vehicle, if number there be, and the rated horse power of the motor vehicle, and shall pay to the Secretary of State a registration fee of $1 for each motor vehicle." These provisions do not apply to manufacturers or dealers in the State of New Jersey except as to vehicles kept by them for private use or hire.

Upon receipt of the application and fee, the Secretary of State must issue a registered certificate for each vehicle, properly numbered, and must have the name of the owner with his address, the number of his certificate and description of his vehicle entered in alphabetical order of the owners' names in a book kept for the purpose.

NUMBERS ON THE VEHICLES.

The third section requires that the number of license certificate must be shown upon the back of the vehicle in a conspicuous place whenever the machine is used on the public highways and so as to be plainly visible at all times during daylight, the figures to be separate Arabic numerals not less than three inches high, and the strokes not less than three-eighths of an inch in width. For the purpose of identification at night the owner must display on the sides or fronts of two lamps, so as to be plainly visible, the number of the license in Arabic numerals not less than one inch high. The law provides that no other marks of identity shall be required.

The registration of the vehicle and purchase of the license conveys to the owner the unrestricted privileges of all public roads, parkways and other public places upon the same basis as other pleasure vehicles, and he cannot be required to obtain any other license or permit nor to observe other limitations as to speed nor to comply with other provisions or conditions except in parks and on speedways created and maintained under special acts of the Legislature approved on March 20, 1901, and March 19, 1902, providing for the establishment and maintenance of such speedways and parks. The present law specifically sweeps away from all city, town or other municipalities the right to limit or restrict the use or speed of motor vehicles, the only regulations that the motorist has to comply with anywhere in the State except in parks and speedways being the new State law.

The transfer of numbers from one vehicle to another, the loan of a license number by one person to another, or the use of a fictitious number is fraught with serious consequences, as section 8 provides a penalty for this of a fine, upon conviction, of not more than $100 or, in default of payment, imprisonment for a period of not exceeding thirty days. A vehicle may, however, display in addition to the proper number of its license, any other number for any lawful purpose, as for instance, the license number of the machine in an adjoining State.

SPEED LIMITS IN MINUTES.

Rates of permissible speed are fixed in section 5 as follows:

(1) A speed of one mile in six minutes upon the curves of a street or highway and at the intersection of prominent cross roads where such street, road or highway passes through the open country, meaning thereby portions of a town, township, borough or village where houses are more than one hundred feet apart.

(2) A speed of one mile in seven minutes where such street or highway passes through the built-up portion of a city, town, township, borough of village where the houses are an average of less than one hundred feet apart.

(3) Elsewhere and except as otherwise provided in subdivisions 1 and 2 of this section, a speed of one mile in three minutes, provided, however, that nothing in this section contained shall permit any person to drive a motor vehicle at any speed greater than is reasonable, having regard to the traffic and use of highways, or so as to endanger the life or limb or to injure the property of any person; and it is further provided that nothing in this section contained shall affect the right of any person injured either in his person or property by the negligent operation of a motor vehicle to sue and recover damages as heretofore.

MUST STOP UPON SIGNAL.

Persons driving timid or spirited horses are protected by the provision in Section 6 that the driver of a motor vehicle shall, at the request of or upon signal by the raising of a hand or otherwise from a person riding or driving a horse or horses in the opposite direction, bring the automobile to a stop and remain stationary until the horse or horses have passed.

Racing in automobiles or attempts to break speed records on the roads of New Jersey on wagers is placed under a severe ban by providing a special fine not exceeding $50 or imprisonment not exceeding twenty days as a penalty upon conviction.

LAMPS AND ALARMS.

At least two lighted lamps are required from one hour after sunset to one hour before sunrise, showing white lights visible at least 200 feet in front, and at least one red light visible from behind. Every motor vehicle must also be equipped with a good and efficient brake or brakes and shall be provided with a horn, bell or other signal device.

PENALTIES FOR INFRACTIONS.

Sections 10 to 20 of the new law deal fully with the penalties provided for violation of the other sections and with the procedure in apprehending offenders and before the magistrate against offenders. The penalties are as follows:

For failure to register a vehicle and secure a license, a fine of $50; for failure to display the number of the certificate in figures of the proper size on the vehicle, $15; for neglecting to show the required lights at night, with the number of the vehicle on them as prescribed, $10; for exceeding the speed limit on sharp curves of any street or highway or at intersections of roads in the open country, and for exceeding the limit in built-up portions of cities and towns, $25; for driving faster than one mile in three minutes elsewhere in the State, $50; for failing to stop when signaled by the driver of a restive horse, $10. In default of payment of any such fine it is provided that the violator of the law shall be imprisoned not to exceed ten days. The fines in all cases may be doubled for a second conviction upon the same offence, and in case of a second violation of the speed limit in the open country (a mile in three minutes, or twenty miles an hour) the magistrate may at his discretion order the offender imprisoned not to exceed ten days instead of fining him.

STATE OF NEW JERSEY

APPLICATION FOR MOTOR VEHICLE LICENSE

STATEMENT

In conformity with the provisions of an act entitled "An act defining motor vehicles and providing for the registration of the same and uniform rules regulating the use and speed thereof," approved March 23d, 1903, I the undersigned owner, do hereby state that my residence is at No. .....

City or Town .....

State of .....

The character of my Motor Vehicle, for which application for license has been made, is .....

The name of the maker is .....

The manufacturer's number is .....

The rated horse-power is .....

(Or some other.)

Dated 190

NOTE.—The statement and declaration should be forwarded to Hon. S. D. Dickinson, Secretary of State, Trenton, N. J., with one dollar, the fee for registration.

LEGAL FORM OF STATEMENT.

HOW ARRESTS SHALL BE MADE.

Constables and police officers are authorized specifically to arrest without warrant any person driving a motor vehicle on the public highways of the State in a race or on a bet or wager and to at once bring him before a magstrate who will issue a warrant returnable forthwith and proceed to hear the complaint and determine the case or adjourn it.

For the apprehension and bringing to trial of the violator of any of the other sections or provisions of the law, the following procedure is provided in section 10:

> 10. Upon oath or affirmation made according to law that any person has violated any of the provisons of this act, any magistrate of the county where such offence is committed may, within three months after the commission of such offense, issue process in the nature of a summons or warrant, in his discretion, at the suit of any person, to the use of the overseer of the poor of the city, town, township or borough where such offence is committed, against the person so charged, which process shall, when in the nature of a warrant, be returnable forthwith, and when in the nature of a summons, in not less than three nor more than ten days; such process shall state what section or provision of this act is alleged to have been violated by the defendant, and the time and place of such violation, and on the return of the process, or at any time to which the trial may be adjourned, the magistrate before whom said complaint shall be made shall proceed to hear the testimony and to determine and give judgment in the matter without the filing of any pleading. * * *

PROCEDURE BEFORE MAGISTRATES.

Other sections provide for the adjournment of the hearing for from three to ten days upon the request of the defendant and the deposit of $50 as security for his appearance at the later date; the forfeiture of the sum in case of his failure to so appear and the payment of the amount to the overseer of the poor for the use of the poor of the city, town, township or borough in which the offence was committed.

In case the violator of the law lives in or is known to be in any other county than the one in which the original warrant is issued, the magistrate must direct in writing that the sum of $50 be deposited as security by any party so charged and the party serving the warrant shall carry it to some magistrate in the county where the offender resides or can be found, and the magistrate to whom it is presented shall indorse it with an authority to arrest such offender. When apprehended, the violator will be taken before the indorsing magistrate or some other magistrate in the same county who is authorized to receive a deposit of $50 as surety for the appearance of the defendant before the magistrate who originally issued the warrant.

In default of immediate payment of any fine imposed the magistrate may accept a bond to the overseer of the poor of the township in double the amount of the judgment and costs with at least one sufficient surety, conditioned to pay the said judgment within a period to be fixed by the magistrate, not exceeding ten days, or in lieu of such bond, the magistrate is authorized to retain possession of the motor vehicle belonging to the offender as security for such payment.

STATE OF NEW JERSEY

APPLICATION FOR MOTOR VEHICLE LICENSE

DECLARATION

In conformity with the provisions of an act entitled "An act defining motor vehicles and providing for the registration of the same and uniform rules regulating the use and speed thereof," approved March 23d, 1903, the undersigned does hereby declare that ..... is the owner of and competent to drive the motor vehicle described in the statement hereunto annexed, for which application for license is hereby made.

..... Owner.

Residence, No. .....

City or Town .....

State of .....

State of .....
County of ..... } ss.

..... being duly sworn, says that the facts as stated in the foregoing declaration are true.

Subscribed and sworn to before me, this / day of 190

NOTE.—In a State outside of the State of New Jersey the affidavit should be taken before a Master in Chancery of New Jersey, or a Foreign Commissioner of Deeds for New Jersey in the State where taken. When taken before a Notary Public of another State a certificate of the Clerk of the County in the State where taken, showing the official character, etc., of the Notary Public, should be annexed to the affidavit.

DECLARATION OF OWNER.

FINES GO TO THE POOR.

The fines collected from injudicious automobilists are to be paid to the overseer of the poor for the use of the poor, which provision may have a tendency to justify or mitigate the offense in the mind of the violator of the law upon philanthropic grounds.

The new law, designated as "An act defining motor vehicles and providing for the registration of the same and uniform rules regulating the use and speed thereof," was approved March 23 last, and went into effect immediately.

Formal notice of the offer by Albert Harmsworth of an international motor boat trophy was given the members of the Automobile Club of America at their regular weekly gatherng, March 24. Much interest was shown and the hope was generally expressed that American owners and manufacturers of motor boats would avail themselves of this opportunity for securing further distinction for our products.

NEW VEHICLES

Pachard K, With Limousine Body.

An American car that won a great deal of admiration at the New York and Chicago shows was the new model K Packard, exhibited at Madison Square Garden as regularly fitted with a tonneau body, and at the Coliseum with a specal Henry Binder limousine body, as shown in the accompanying engravings. Thus equipped it is the highest priced American pleasure car yet built. The graceful and beautifully harmonious lines of the body are evident in the photograph. The material of the body is aluminum, handsomely and luxuriously upholstered to afford the utmost protection and comfort in riding. The operator's seat is protected by a front glass and the capacious interior of the closed portion of the body is amply lighted by bevel plate glass windows. Entrance is by a broad door of full height in the rear, provided with a thickly cushioned strap seat. A high brass railing crowns the top, and retains in place two wicker hampers for use in touring. The finish is in deep blue. The suitability of the car, so fitted, for touring and making shorter trips in all sorts of weather is manifest.

The model K is regularly fitted by the Packard Motor Car Co. as a standard tonneau. It is, strictly speaking, a machine built on the Mors plan, having a complete chassis with a removable body. A four-cylinder vertical engine giving 25 horse power, with novel governing system, is used. This engine is arranged at the extreme front of the machine, and is ordinarily controlled by a ball governor, which controls the left of the inlet valves and simultaneously advances or retards the ignition. A lever transversing a segment arranged concentric with the steering wheel is connected with the governor, and may be used to neutralize its effect. This lever may be used to accelerate the speed of the engine beyond the governor limit, or may be used to retard it. It, of course, simultaneously varies both the instant of ignition and the opening of the inlet valves.

The Packard sliding gear transmission is used, and an interlock is provided between the change gear lever and the clutch pedal, necessitating the throwing of the clutch before changing the gear. The regular brake is arranged directly upon a drum carried on the main driving shaft at the rear of the change gear box, and this shaft is provided with a universal coupling and drives through bevel gears to the differential upon the rear axle. All parts are thoroughly incased, and, as far as possible, run in oil. The oil is fed to the engine cylinders and main bearings under pressure induced by a pump arranged in the case of the oiler and driven from the cam shaft. In addition to the engine oiler, a hard grease oiler is arranged upon the dash, with feed tubes connecting with the bearings of the transmission system. The regular Packard carbureter is provided with a single float-feed chamber and two carbureter chambers, each one arranged to take care of two cylinders. A forced circulation of water is used for cooling, and is secured by a positively driven gear pump. The water tank is located at the extreme rear and the gasoline tank under the front seats.

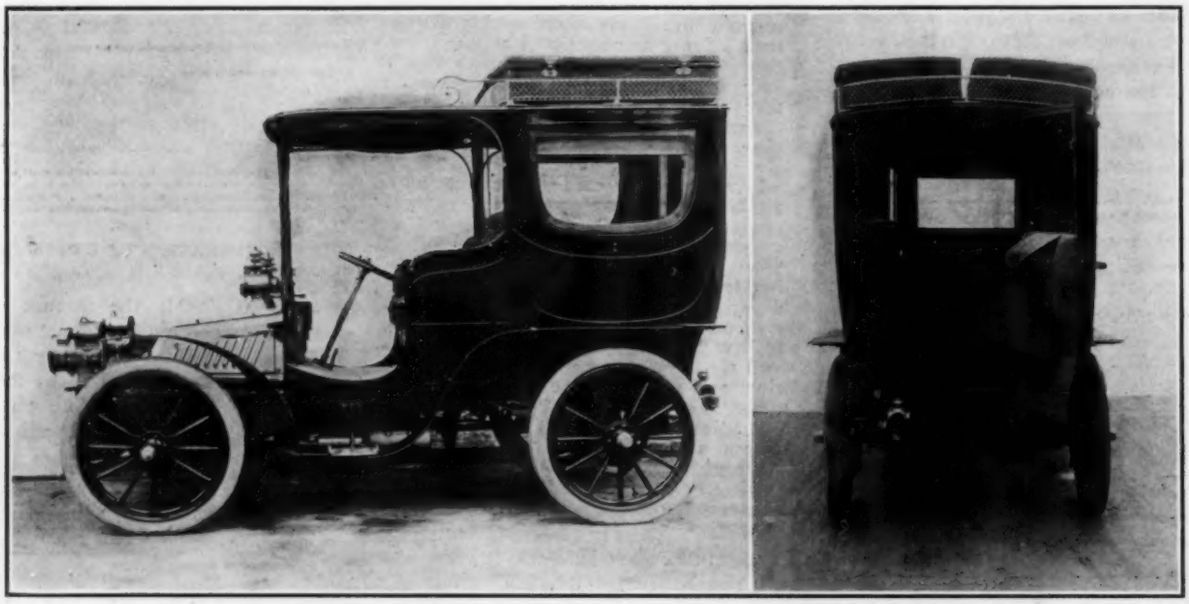
A novel arrangement of space or distance b s is used upon the rear axle, and lies just under the half elliptic springs, and is connected at its forward ends with the spring shackles. The wheel-base is unusually long—94 inches. Thirty-six inch wheels are used, fitted with 4-inch detachable tires.

The ignitor circuit may be cut off by depressing a push button arranged in the frame of the steering wheel, and in addition a two-way switch, with bodily removable handle, controls the circuit from either of two batteries. A gauge on the dash shows at a glance whether or not the water is circulating properly.

Eldredge Gasoline Cars.

After experimenting for more than a year past with a gasoline automobile and thoroughly trying it out on the poor roads of central northern Illinois, the National Sewing Machine Co., of Belvidere, widely known as builders of Eldredge and Belvidere bicycles has finally completed a new model that is satisfactory to its officers. A first lot of ten of these cars is now coming through the big plant and will be completed in about a month, when it will be followed by a lot of fifty, work on the various parts of which will be started before the parts for the first lot have been assembled.

While the car itself embraces a number of interesting new features, especial pride is taken by the builders in the motor and transmission mechanism. The former is of the four-cylinder opposed horizontal type, exploding successively around the circuit. It is, nominally, of 12 horse power and is placed near the rear end of the frame, with the flywheel under the center of the car. The clutch is on the right hand end of the crank-shaft while the transmission is in a separate casing under the foot-board. Sliding gears are employed, driving direct on the high speed with all intermediate gears out of mesh and standing still. Drive is by central chain to the differential on the rear axle. The car is controlled by two hand levers and two



SIDE AND REAR VIEWS OF PACKARD VERTICAL ENGINE LIMOUSINE BODY TOURING CAR.

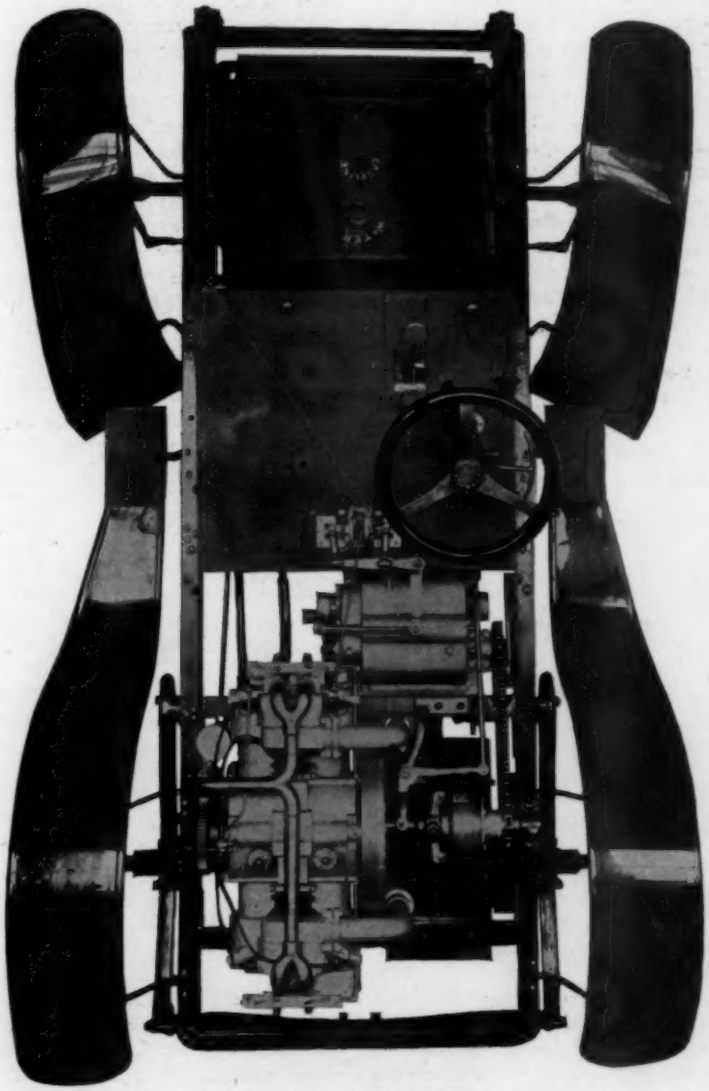
pedals. The castings and all machine work are of a superior quality of workmanship, equaling that on the best foreign machines, and the company's large facilities for manufacture will make economical production possible.

Since the completion of the new car it has been put through constant daily trials on the roads about the factory in Belvidere where the mud was from two to eight inches deep, of the coal black Illinois alluvial kind, and where there is not a single paved street.

The general style of the vehicle is shown by the photograph of the car in perspective, while the photograph of the chassis from above shows the arrangement of the power plant and operative parts. The body, which is of the popular hooded type, has individual seats and a square rear portion adapted to receive a dos-a-dos seat. The front seat is hinged along the front edge so that it can be tipped forward to give access to the motor beneath, while the top of the rear body part is also hinged along its front edge. The hood can be taken off by removing half a dozen bolts, and the entire body, hood and all, can be lifted off after unscrewing four bolts, leaving the foot-board with its attachments in place.

ELDREDGE 12-HORSEPOWER ROAD CAR.

The frame is of angle steel, bent at the corners and riveted, and is carried on platform springs both fore and aft. The wheels are of artillery wood pattern, fourteen spokes to each. Tires are three-inch detachable pneumatics.



CHASSIS OF ELDREDGE 12-HORSEPOWER ROAD CAR.

The motor is a four-cylinder opposed engine placed horizontally at the rear end of the frame. It is a slow-speed motor, giving its best service at about 600 revolutions per minute, with a possible variation by throttle from 110 to about 1,800 when raced. Normally the variation is from 250 to 800, developing 4 horse power at the slower speed and 12 horse power at the higher speed. The cylinders have 3 3-4 inches bore and the pistons a stroke of 4 inches. The cylinder heads, which are removable by unscrewing, so that the pistons can be withdrawn through the head when the connecting rods are disconnected, are cast with an internal concavity which is duplicated on the piston head to give an almost spherical explosion chamber. The cylinder heads screw in against a taper shoulder, providing a tight fit at all times. The pistons are connected independently to the cranks, the connecting rods being set off center and the rods of each pair of pistons being connected to the same crank. The explosions occur successively around the circuit of cylinders, so that the pistons move in pairs in opposite directions, balancing each other.

The cylinders are cast in pairs, their respective valve and ignition chambers being cast integral with them. The crank case is cast in two parts and when the cylinders are bolted in place is entirely inclosed. The valve chambers are at the top of the cylinders, with the inlet valves and exhaust valves directly opposite each other, the exhaust valves being on the inner or crank side of the chamber. The spark plugs are set in at an angle, with the points between the valves and directly in the path of the inrushing fresh charge, which tends to keep them clean. The intake valves are suction operated, and all four are simultaneously throttled by wedge controllers

made in pairs and connected to the same rod. The exhaust valves are of large area and are opened by forged and machined arms mounted in the case to slide and press against the valve stems when forced outward by cams on the time shaft pressing against rollers in the ends of the sliding arms. The time shaft is mounted directly above and parallel to the crank-shaft, and permits of a most ingenious and simple arrangement of sparking device.

IGNITION SYSTEM.

Instead of commutating the primary current, and using four spark coils, but one spark coil is used, with one contact-breaker and a four-lobed cam, and the current from the coil is sent to one or another spark plug by a special commutator on the motor. This commutator includes a fiber disc, bolted fast to the side of the crank-case and having the two-to-one shaft passing through it. In the outer face of the disc are two concentric grooves, one of which is filled with a continuous copper ring, while the other is filled with four copper segments separated by guttapercha. The two rings are insulated from each other, and the former is connected with the positive wire from the secondary coil, while the segments in the other are connected in order to the plugs. One arm of the spur gear on this shaft is enlarged and recessed to carry on its inner side two brushes, electrically connected but insulated from the gear, which bear one against each of the rings, and send the spark current to the plugs in succession. The four-lobed primary contact cam is on the same shaft, just inside the fiber disc, and it moves one contact point of a make-and-break pair into and out of contact with the opposite pair, as seen from above the motor, four times in a revolution of this shaft. These contact points are mounted on an insulating support, and are rotatable about the shaft for advancing or retarding the ignition.

SPECIAL CLUTCH USED.

An unusual disposition of the transmission system permits of the placing of the clutch on the right-hand end of the crank-shaft where the planetary system is commonly placed. This clutch is itself of an unusual construction. A cup-shaped casing is carried on a sleeve on the shaft, its open end toward the motor. Keyed slidably to the inner face of periphery of this cup are two broad, flat rings with the centers bored out for the passage of the crank-shaft. Alternating with these are three similar rings feathered onto the shaft, and between the meeting faces of all are fiber sheets or rings. The cup is closed on its inner side by a steel plate in no way connected with the cup and against which pressure is brought to bear by two clutch fingers forced inwardly by a cone feathered on the shaft and movable by one of the hand levers through a yoke, as shown. When the short arms of the clutch fingers press against the clutch plate they force all of the friction rings into contact, sliding them together and gradually taking up the motion of the engine. Thus is provided an enormous braking surface area in a small clutch that picks up so easily that the car can be started from a standstill on the high speed direct drive gear.

The sleeve of the clutch case is provided with a sprocket whence the power is transmitted by chain on the right side to the change speed gearing carried beneath the seat. Before describing the transmission, however, it should be observed that the long arm of the bell-crank that moves the clutch cone carries a brake shoe adapted to engage the periphery of the clutch casing, so that a continuation of the movement of the lever that releases the clutch also sets the brake. An emergency brake is provided at the right end of the rear axle, being of the expanding type and set by foot pedal.

THE TRANSMISSION SYSTEM.

The transmission system is forward of the motor shaft, below the seat, and the power is transmitted to it by chain from the clutch to the right end of the main gear shaft and from the left end of this shaft by center chain to the differential on the rear axle. The transmission is of the sliding gear type, giving three speeds forward and two reverse speeds, and driving direct on the high speed with all intermediate gears out of mesh. This is accomplished by the use of two sliding shafts, one above and the other below the pair of gear shafts, and one carrying the intermediate pinion for reversing and the other the yokes for moving the sliding gears on the counter-shaft. The two sliding shafts are moved by separate hand levers rising from the foot-board in front of the middle of the seat and to the left of the steering wheel. The gear for reversing can be thrown into mesh with both the low speed and intermediate speed gears, giving either a slow or quick reverse. On the highest forward speed gear the car has a calculated speed of twenty-four miles an hour.

The differential is of small diameter, being of the sun and planet type with wide faced gears. The two halves of the casing are cast by the Whiteley process integral, each with one-half of the axle sleeve, whose outer end reaches to the wheel hub. Plain axle bearings are used.

A float-feed carbureter of the National Company's own make has a conical spreader with fourteen ports or ducts for the gasoline feed over which passes the inrushing air. The gasoline and air ports are permanently regulated for a speed variation of the motor from 250 to 800 revolutions.

A flat, rectangular steel plate box hung horizontally below the clutch and crank-shaft at the right of the motor muffles the exhaust perfectly, making the Eldredge a very silent car.

The cylinders, crank bearings and other wearing surfaces will be oiled by multiple automatic lubricators.

CYLINDER COOLING SYSTEM.

Circulation of the cooling water is effected in an efficient manner by means of an eccentric pump in which a rotating disc set off center carries a transverse sliding plate that exactly fits the section of the pump interior. A fifteen-tube flanged radiator is hung transversely under the front end of the frame just ahead of the front axle. A peculiar disposition of the tanks has been made, the water tank being made flat and rectangular, about four inches high, and placed just above the body frame over the radiator, while the gasoline tank (with a capacity of eleven gallons) is directly over this, separated by an inch of air space, and is made with a top conforming to the contour of the hood of the vehicle. Both tanks are filled from the top of the gasoline tank, after opening a hinged door at the top of the hood, a pipe from the water tank passing directly through the gasoline tank. The batteries and spark coil are placed beneath the seat of the car.

Novelty also characterizes the method of connecting up the steering levers. The steering column moves a toothed segment having a depending arm movable fore and aft. The rod connected to this arm extends directly forward and has its other end connected to one arm of a bell crank lever fulcrumed to the front axle at its middle. This arm extends toward the right immediately under the axle, while the other arm reaches backward at right angles to it and is linked to the two rods attached to the lever arms of the steering knuckles.

QUALITY OF MATERIALS.

Every part of the Eldridge car is made in the Belvidere factory of the National Sewing Machine Co. with the exception of the rear axle sleeve castings, the spokes and rims of the wheels, the tires, the hand steering wheel and the equipment, such as lamps and horn. The company even makes the bronze flanges for the wheels, which are sent out to be spoked. The engine castings are of a smoothness of grain and outer surface that compares without disadvantage with the castings of foreign engines, while the machine work on the finer parts, such as valves and valve operating mechanism, throttle device, gears and even the bolts and nuts, is of an equally superior grade. The almost unlimited facilities of the big sewing machine and bicycle plant make fine automatic and hand machine work possible, at the same time insuring economical production.

The Berkshire Automobile Club, of Pittsfield, Mass., recently dedicated its new rooms in the Wheelden block in that city. Red and gold, the club colors, have been made prominent in the decorations.

A. C. A. Run to Lakewood Set for April 4.

A second attempt to hold a club run to Lakewood, N. J., will be made by the Automobile Club of America on Saturday, April 4, the runs and tours committee having completed plans for such an event. This will take the place of the run arranged for Feb. 21, which was called off by reason of the snowstorm of that time. The itinerary will be changed somewhat from that arranged for the February run, and which was published in THE AUTOMOBILE of Feb. 7, according to instructions in the circular issued by the committee. By the change, it is arranged that on reaching Old Bridge, eight miles beyond New Brunswick, instead of turning to the right and going through Spotswood, Jamesburg and Englishtown to Freehold, as was planned for the earlier run, the route will be by the left fork beyond the bridge, thence to Mt. Pleasant railroad station (one mile south at Mattawan), here turning to the right and on to Morganville and then straight ahead to Freehold.

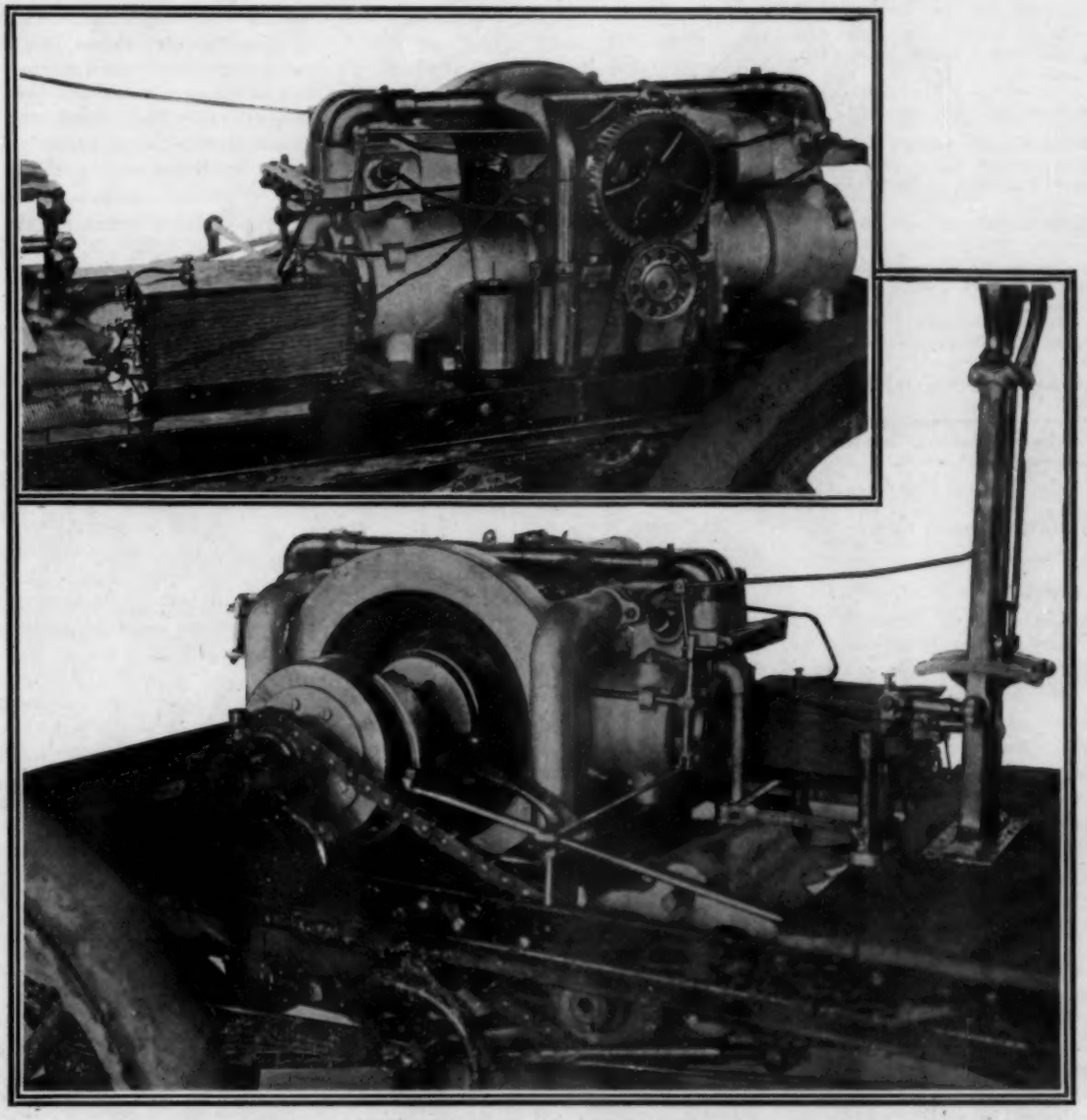
The rest of the route is as first planned, from New York via the Staten Island ferry to St. George, Shore Road to Tottenville, ferry to Perth Amboy, Metuchen, New Brunswick, Old Bridge, Mt. Pleasant, Morganville, Freehold, Turkey, Farmingdale, Squamkum and Lakewood. The distance is 72 miles.

Members who are to take part in the run are invited to rendezvous at the Lakewood hotel for dinner at 7 o'clock, and they will return as they please Sunday or Monday. Storage facilities and supplies at Lakewood may be secured at Hoff's garage in Main street. It is expected that at least 50 automobiles will participate in the run.

Four new members, some of them of more than usual prominence, have been proposed for the Automobile Club of America: the Duke of Manchester, Tandragee Castle, Ireland; H. Clay Pierce, chairman of the board of directors of the Mexican Central Railway Co., and Howland Pell Haggerty, of New York city, and William Thaw, of Alleghany, Pa.

In an attempt to remedy conditions existing in some automobile repair and storage stations in New York city, which have caused complaints that owners of machines are defrauded by mechanics they employ through the payment of commissions on parts purchased in such places, the board of governors of the Automobile Club of America, has issued a blank to its members with questions, the replies to

(*Continued on page 385.*)



POWER PLANT OF ELDREDGE 12-HORSEPOWER ROAD CAR.

Intake side of motor, showing carbureter, special sparking device, temporary wiring and water pump chain. Exhaust side, showing clutch, brake, throttle mechanism and transmission gear casing.

THE AUTOMOBILE

VOL. VIII. NO. 14

Published Every Saturday
by
THE CLASS JOURNAL CO.,
395 BROADWAY NEW YORK CITY
Cable Address - - - - Autoland, New York
Long Distance Telephone - 3405 Franklin, N. Y. City

Western Office: - - 356 Dearborn Street, Chicago, Ill.

SUBSCRIPTION RATES:

United States, Canada and Mexico, One Year, $2.00
Other Countries in Postal Union, - One Year, $3.00

To Subscribers—Do not send money by ordinary mail. Remit by Draft, Post-Office or Express Money Order, or Register your letter.

FOREIGN SUBSCRIPTION AGENTS:

ENGLAND:—Iliffe & Sons, Limited, 3 St. Bride Street, Ludgate Circus, London E. C.
FRANCE:—Boyveau & Chevillet, 22 Rue de la Banque, Paris.
GERMANY:—A. Seydel, Mohrenstrasse 9, Berlin.

To Advertisers—Copy or changes in orders for advertisements for the issue of the week following should reach us not later than Friday.

Entered January 2, 1903, at New York, N. Y., as second-class matter.

The Automobile is a consolidation of The Automobile (monthly) and the Motor Review (weekly).

SATURDAY, APRIL 4, 1903.

CONCERNING IMPORTATIONS.

Nobody can in fairness object to the importation of European-built automobiles so long as they are sold on fair representations. If the importers can do business over a 45-tariff bar, they are entitled to their success, one would be inclined to say at first thought. Indeed, they must have a highly meritorious product, from which we should be able to learn a great deal, if they can do business against such heavy odds. But the automobile business is peculiar. In it the handiwork of engineers is sold to laymen, and the laymen as a rule do not call upon disinterested technical advisers in the purchase. They would do so if they were to purchase a similar value in law, in architecture, in a single piece of machinery for a factory, or even in horseflesh. But automobiles are bought in a flurry of sentiment in which reason is drowned to the best of the salesman's ability, and as often as not on the dictum of a chauffeur whose impartiality and capability of reaching an expert conclusion are not always beyond question.

In this atmosphere of truth and poetry mixed, even millionaires need protection, not because any one need worry over their wasting a thousand dollars or more, but because they are Americans, and it pricks our national pride to have even the richest among us play the part of a "chump" to the world at large.

It has long been the commendable habit of French writers and engineers to laud the innovations of their own countrymen warmly in the press and in colloquy. They have the gift of enthusiasm for every little bit of ingenuity developed by fellow workers and do not stint their words of praise, though they keep close to the facts as a rule, and this in strong contrast to the lukewarm and supercritical greeting that new effort has usually received in England, Germany and America, flopping over into fawning fulsomeness, too often, at the behest of the counting room. The French have fostered where we would have ignored and stifled till the seal of approval was received from abroad. We cannot wonder, therefore, if the French are ignorant of where our industry really stands to-day. Being as self-centered and confident as they are, it is hardly credible that they should have examined American machines carefully in the shop and tried them on the road, and it is quite inconceivable that they should be conversant with our latest progress and the conditions under which automobiles are used in this country.

While we may be inclined to admit on general principles that there are more good road machines made in Europe than here, it behooves us when met with extraordinary and extravagant claims in justification of extraordinary and extravagant prices, to do that which we can do in other purchases of engineering products, to wit, hire a competent man to apply the "engineer's estimate," in which price and construction are both duly considered. We should do this not necessarily with a view to excluding the imported machines if they fail to meet the engineer's financio-technical test—other considerations being also legitimate—but so as to bring it clearly before our public how much we are charged for a fancy and how much for the utility that answers our requirements. Eventually the result should be that oversold factories and jobbers in Europe dismiss the idea that any price can be obtained in America for a car consecrated by one of the names which have become celebrated through success at 70 miles per hour, and near the base of repair supplies. The French themselves are becoming alarmed over the greed of their middlemen and fear that their extortions will kill the American and other foreign geese. One of the leading French authorities has indeed expressed a wish that some combination of American capital could be induced to build a factory, on the largest scale, in France and manufacture and sell machines of high quality and fair price. On this side of the Atlantic it is notorious that some of the highest priced foreign built and imported machines have proved themselves quite unsuited to American conditions of travel and have been costly failures.

The slogan of the invaders should be hunted down until wind and sun are shifted impartially between the home industry and the foreign industry, and nothing would serve this purpose better than that complete and prompt publicity for the construction of American-made cars without which a real comparison with foreign cars cannot be instituted. It devolves mainly upon our manufacturers to facilitate this work of self-defense by entering more frequently than they do upon a public explanation and justification of the constructions which they offer in the market. So long as they limit themselves to adjectives and claims, it is at least excusable that too much credence is given to the counterclaims of their European competitors. The signatures of our manufacturers do not appear often enough in the reading columns of the press.

WANTED—A HORSE POWER FORMULA.

That there is a great lack of reliable data for expressing the relation between weight, speed and horse power in automobile propulsion, is a fact that was recently emphasized afresh in our mind by an analysis of a formula put forth by a French engineer in one of our foreign contemporaries. This formula treats wind resistance as depending on the square of the speed and the nature of the exposed surface, using for this purpose the expression,

$$R = .0027\ AV^2,$$

in which A is the projected area in square feet of the "front," and V the velocity in feet per second. This is very similar to the expression for wind pressure on a flat surface, which is,

$$R = .0023\ AV^2,$$

R being in pounds in both cases.

Tire resistance is taken as 2 per cent. of the weight at all speeds, and the resistance due to friction in the transmission is averaged at 30 per cent. of that encountered at the wheels. Consequently the equation for the total resistance to be overcome by the engine, converted into terms of pounds "drawbar pull," reads:

$$R = 1.3\ (.0027\ AV^2 + .02\ W).$$

In other words, for a given machine, all but a small and constant portion of the resistance to be overcome is, by this formula, proportional to the square of the velocity. As power is measured by the product of resistance into velocity, it is plain that the horse power consumed will increase nearly as the cube of the velocity for a machine of given size, shape and weight. Such a result is evidently absurd, as the following table of results, calculated from the formula, for a machine having a total weight of 2,400 pounds, and a projected front area of 10 square feet, will show:

Speed, miles, 15, 30, 45, 60, 90, 120,
H.P. required, 3.16, 10.4, 25.8, 53.4, 161.5, 368.

Since the French engineer's formula

breaks down, the question arises, What can take its place? It seems self-evident that the tire resistance, instead of being constant, must be a function of the velocity, and that it will increase more rapidly with increase of speed on rough roads than smooth. As this, however, would exaggerate still more the power demanded at high speeds, we are compelled to infer either that tire resistance is a much larger fraction of the total at high speeds than in the formula quoted, and that it varies as a lower power of V than the square, or that the wind resistance itself varies, not as V^2, but as a lower power, perhaps about $V^{1.8}$.

Probably if the wind resistance and tire resistance could be separated, it would be found that both the above assumptions are true; but the problem is to devise some form of test which will separate the two. In an unexplored field like that opened by the automobile, *à priori* theorizing is dangerous and seldom profitable. The engineer who solves the problem will benefit the industry and win well-earned distinction.

It would be interesting to know how the framers of the Scovel bill, just passed in New Jersey, came to the conclusion that a Locomobile was not an automobile. In the opening clause of the act the words "automobiles, locomobiles and all other vehicles, etc.," occur in designating the classes of vehicles to which the law applies. No doubt the builders of the Locomobile will not raise any objection, for the use of the name locomobile in this connection is rather a distinction, implying that there is something unique about the widely known steam vehicle, and therefore not shared in common with the ordinary run of motor cars. But will the other builders of "mobiles" of one sort or another thank the framers of the bill for their sin of commission, or, from their standpoint, omission? What about the Simon pure "Mobiles" and the "Oldsmobiles," the "Knoxmobiles," the erstwhile "Gasmobiles" and others of the clan. It is to laugh.

Kirkpatrick to Use Mooers' Racer.

SYRACUSE, March 28.—W. H. Kirkpatrick, of Cleveland, was in town a few days ago and entered a racing machine in the State Fair races to be held in September. The machine is now building. It will be called the Green Dragon, and will be driven by Barney Oldfield, of Detroit. The Green Dragon will have a 60-horse power motor and will compete for the Gordon Bennett cup in Ireland, being driven in that race by L. P. Mooers, of Cleveland.

Plans are being made by the Automobile Club of Binghamton, N. Y., for an automobile parade Saturday afternoon, April 4, in which fully seventy-five machines will participate.

CLOSE OF WASHINGTON SHOW AFTER SUCCESSFUL WEEK.

Special Correspondence.

WASHINGTON, D. C., March 28.—After a week's run the automobile show promoted by the local dealers was brought to a close to-night with the playing of "Home, Sweet Home," by the orchestra, and the sounding of taps by a bugler, drowned toward the end in a din of raucous French horns, to the great annoyance of the theater patrons overhead. The show was favored with fine weather up to the closing night, but the attendance did not come up to expectations, owing possibly to the fact that general admission was fixed at 50 cents, when 25 cents is the usual price. Few visited the show out of idle curiosity, and prospective purchasers were not elbowed out of the way, but were enabled to inspect all the machines to their heart's content.

Reports of business done were generally satisfactory, although one or two exhibitors complained that they did not have as much success as they expected. "Sold" cards were much in evidence during the last two days. Aside from the amount of business transacted during show week there was considerable inquiry that can be followed up when the dealers have more leisure than during the show. The third annual exhibition may be said to have aroused additional interest in the subject of automobiles, which cannot fail to result in more sales.

Another show will be held next spring, probably during the last week in March, by the Washington Automobile Dealers' Association. It will be held in Convention Hall, where the facilities are much better than in the Light Infantry Armory.

One of the pleasing features of the week was the hospitality dispensed by the National Capital Automobile Club, which had a large booth at the head of the center aisle. The booth was enclosed and was handsomely decorated with palms. Scattered about were easy chairs for the comfort of the visitors, while those who cared to read were handed copies of the late issues of the automobile papers.

EXHIBITORS AND EXHIBITS.

The exhibitors and the vehicles or sundries that each showed were as follows: American Cycle Manufacturing Co., local branch, Toledo, Waverley, Cadillac and Elmore; National Capital Automobile Co., Peerless, Autocar, Packard and Oldsmobile, with chassis of the Peerless and Autocar; Cook & Owesvey, Winton, General and Stevens-Duryea; National Motor Car Co., Thomas; Washington Electric Vehicle & Transportation Co., Columbia electric truck; Charles E. Miller & Bro., Grout, Darracq, Reading steamer and Clement motor bicycle; Automobile Co. of Washington, Conrad, Locomobile and Rambler, with Rambler chassis; Washington Motor Car Co., Orient Buckboard, Northern and Knox; Howard W. Gill of Baltimore, Stanley; Automobile Storage & Repair Co., Buffalo electric and aluminum castings made by Pittsburg Reduction Co.; Rose Manufacturing Co., of Philadelphia, Neverout lamps; Howard A. Rhine & Co., Merkel motor bicycle; C. S. Kessler & Bro., Diamond tires and French horns, pumps and other fittings; Automobile Storage & Repair Co. and National Electrical Supply Co., a line of batteries, spark plugs, Rushmore searchlights, Atwood lamps, and New York Belting & Packing Co.'s tires; Walker & Hazelton, Fisk tires; Tennant Automobile Tire Co., of Springfield, O., a line of tires; Twentieth Century Manufacturing Co., of New York, Twentieth Century lamps; Schaum Automobile & Motor Manufacturing Co., of Baltimore, Champion accumulators and Schaum spark plugs.

A. C. A. Club News.

(*Continued from page 383.*)

which, it is hoped, will give some tangible information as to the exact state of affairs.

These questions require the names of mechanics whose work has been unsatisfactory, the name of the mechanic at present employed, a statement as to his work whether satisfactory or not, and as to his habits, the address of any garage where storage has been unsatisfactory and the reasons why.

Clubs to Associate on April 10.

Special Correspondence.

SYRACUSE, March 28.—The meeting to perfect the proposed New York State Association of Automobile Clubs will be held at the Yates House, in this city, on April 10. Replies have already been received from most of the clubs in the State to the effect that they will send representatives. At the meeting a constitution and by-laws will be adopted and officers will be elected. The Syracuse men will urge that Hurlburt W. Smith be elected president, and thus far no opposition has developed.

Automobilists of Auburn will form a club Wednesday evening and an invitation has been extended to several Syracuse enthusiasts to be present. Among those who will go are H. W. Smith, F. H. Elliott, C. Arthur Benjamin, Willet Brown, George Larrabee and Charles Lee, of Syracuse, and John Maxwell, of Oneida. There will be a banquet at the Osborne House.

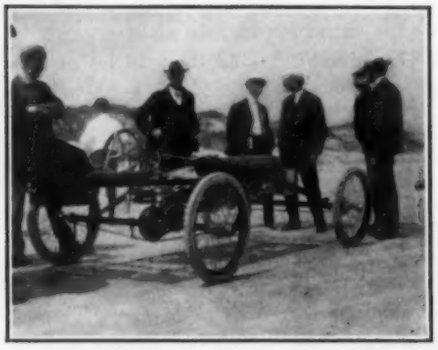
Elkwood Park, Long Branch, N. J., the property of Philip Daly, of Philadelphia, has been leased by Charles Carson, of New York city, who is organizing the Automobile Association of New Jersey. It is the intention of the lessee to make the park a headquarters for automobilists and race meets will probably be held there this summer.

Florida Auto Races

(*Continued from page 366.*)

before the line and machines were ready for the trials.

In the meantime Winton, Thomas and Hedstrom had arrived and made meteoric



INSPECTING THE OLDS PIRATE.

flights up and down the beach for practice. All were delighted with the course at first and were confident of records until the traction and chain troubles developed and cast a doubt about any phenomenal figures evolving from the trials.

WINTON STARTS THE TRIALS.

When Mr. Winton saw the signal flag flying, he swung up the beach, turned and came down with the speed of the wind. The timer at the start pressed the button and at last a trial was on. Word was passed up the beach that "56" was the time. Again he tried, but the tide had risen and robbed him of some good going. This time his score was 57 seconds.

Next came Mr. Thomas in the new Oldsmobile racer. It is a new 10 horse power touring car chassis fitted with a racing seat and some special alterations for racing purposes and to avoid wind resistance. It has double opposed horizontal cylinders, a worm gear steering wheel with the rod almost horizontal, and rocket shaped tanks. The whole machine has a speedy clipper-built look about it. Its performance did not belie its appearance, for the watch showed a mile in 1:06 1-5 after it had flashed by the finish post. A second attempt netted 1:09 2-5.

Straight as the arrow from a bow sped Hedstrom in the only trial he made. The result was 1:09 for George Hendee's Indian 3½ horsepower motor cycle.

Raymond Boothroyd won the mile race for Oldsmobiles in 1:36, with Dr. W. F. Robinson, of New York, second; and Dr. Bennett, of Daytona, third.

J. F. Hathaway, of West Somerville, Mass., in a Stanley steamer, lowered the Florida beach record for steamers to 1:28 2-5. It was Mr. Hathaway who first called attention to the possibilities of this beach for racing and record breaking.

Second Day's Events.

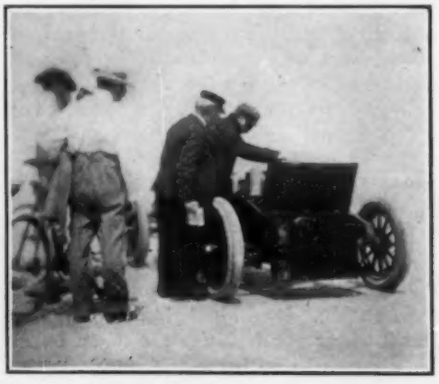
Better management, more satisfactory timing and a crowd of trebled size marked the second day's racing. But the trials which were run at Daytona failed to produce the new records hoped for and expected with some confidence. The best mile times made were: Winton, 58 seconds; Thomas 1:13 2-5, and Hedstrom, 1:15 1-5.

The contestants declared the Daytona mile course not to be as smooth that day as the Ormond stretch on Thursday. A sudden shifting of the wind to the north after the Mors timing machine had been arranged for the races and trials to be run northward, compelled the contestants to ride against the wind, whereas it had favored them the day before.

The Winton "Bullet" had been completely overhauled and keyed up since the previous day, and a record was deemed an assured thing. Trouble with the clutch came, however, and defeated all attempts.

ARRANGEMENTS IMPROVED.

A telephone connected the Mors machines on the second day, enabling quick adjustment of the instruments and saving tiresome trips back and forth. Wires were stretched for some distance each way from



GETTING THE BULLET READY.

the finish, where the crowd gathered, to hold it in check. Beyond them the committee was on hand to keep the course clear by appeal and command.

INTERESTING SPECTATORS.

Daytona has a winter population of 6,000 and from 3,000 to 4,000 of them, including the visitors from Ormond and the back country, saw the contests. Bluff and beach were thronged with the summer-garbed crowds of fashionable men and women, who make up most of the winter population. There was a sprinkling of open-eyed and open-mouthed "crackers," and "pickaninnies" tumbled and played about the beach in swarms. The tout ensemble was interesting and unique and altogether characteristic of a Florida winter gathering on a northern June day.

SLOW TIMES MADE.

The racers started from down the beach, passed the flags at the start and finish and then rode back to learn the times they had made.

Alexander Winton's times in succession for the straightaway mile were: 61 1-5, 59 4-5 and 58 seconds.

R. E. Olds rode down to Daytona on the small seat of the Oldsmobile racer beside H. T. Thomas, who drove. Mr. Thomas was naturally disappointed that he could show Mr. Olds no faster figures than 1:13 2-5 and 1:08 4-5, which he scored in order.

Oscar Hedstrom's time was caught only once, at 1:15 1-5. J. F. Hathaway drove his Stanley a mile in 1:35.

MOTOR CYCLE CHAMPIONSHIP.

Between the trials a mile motor cycle race was run for the championship of Florida. W. W. Austin (Indian) won in 1:36. D. P. Merrill (Orient) was second in 2:03.

STRAIGHTAWAY HANDICAP.

A five-mile handicap brought out a distinguished field of starters so far as the back markers went. The handicap was very justly arranged by A. G. Batchelder, the referee, on the basis of the records the machines had already made on the beach.

Stop watches were used, and the times were figured out at the close. The times, though they cannot be relied upon for record purposes, doubtless give approximately accurate results. The men finished as follows:

	Hdcp.	Times.
1 Oscar Hedstrom (Indian)	:50	5:37
2 H. T. Thomas (Olds)	1:05	6:05
3 R. Boothroyd (Olds)	5:15	10:45
4 A. Winton (Winton)	Scr.	7:23
5 W. F. Robinson (Olds)	6:00	15:02

Third Day's Racing.

Saturday's racing was at the Ormond end of the course, and the direction taken was south. There was a gentle east wind a little from the north. The Mors timing was prompt and satisfactory and enabled the record aspirants to make as many trials as they pleased before the tide and

SPECTATORS ON THE COURSE.

rain shut them off, at a little before 3 o'clock.

The luck and triumph of the day were mainly with Oscar Hedstrom and his Indian motor bicycle. A mile in 1:03 1-4

was quickly followed by another in 1:03 1-5, the watch having been changed to a fifth-second one.

H. T. Thomas, driving the Oldsmobile "Pirate," came close to his American mile record of Thursday in both trials, but failed to equal it. The watch said 1:06 3-4 and 1:07 1-5, in order. A record kilometer—42 seconds—and the glory of a close race with the "Bullet" despite their difference in weight and power, fell to his lot and sent him home well satisfied with the results of his three days on the beach course.

WINTON'S MANY ATTEMPTS.

Starting with 54 1-5 seconds, Mr. Winton cut his figures to :52 2-5, and then to :52 1-5, within but three-fifths of a second of beating Fournier's Coney Island figures. But try as he would, he could not get any nearer to the goal. A series of stubborn attempts netted him in succession :55 1-5, :55, :54 4-5, and :54 1-5. For a windup he took W. H. Peters on board with a watch, scored 58 seconds by the Mors timer, and was then forced by tide and rain to quit.

While the first Florida automobile meet was not as successful as the promoters had hoped it would be, it was of sufficient importance to mark a new area in automobiling. It has served to convince such enthusiasts as Winton, Olds, Hathaway, Mudd and others that Florida offers an excellent opportunity for winter meets. Those who have participated in this meet are returning home satisfied with the conditions, not only as to racing, but as to the social features as well. They have been entertained at one of the magnificent Florida resorts, where life at this season of the year represents everything and every part of the United States.

Daytona Banquet to Visitors.

Daytona took the visiting automobilists under her wing Friday night and extended the proverbial southern hospitality. Charles Peters, a hustling newspaper man, gave a banquet to the visitors and local club members at the Hotel Desplaud. The dining-room and table were handsomely decorated in appropriately semi-tropical fashion. There were story telling and a good time generally without much attempt at formal speech making.

Mr. Winton, though, was made to say a few words. "This is the finest natural race-course in the world. If I fail to make a record before I leave, I shall come here again next year and try for one," said he.

Vice-President Frank X. Mudd, of the Chicago Automobile Club, declared he was coming down for three weeks next year with his Winton touring car.

ORGANIZE FOR ANNUAL RACES.

At a meeting of the officials and promoters of the present meet at Dr. H. H. Seelye's preceding the banquet, it was decided to form the Florida East Coast Automobile Association to promote these affairs annually at a time convenient to the manufacturers as regards the shows.

Among the guests at the banquet were: Alexander Winton and Charles B. Shanks, Cleveland; R. E. Olds and H. T. Thomas, Detroit; Frank X. Mudd, Chicago; Capt. H. G. Opdyke and A. G. Batchelder, Newk York; Oscar Hedstrom, Springfield, Mass.; Mr. Seymour, secretary of the Florida Good Roads Association; State Senator A. S. Mann, of Florida; Dr. F. P. Hoover, Jacksonville; and J. F. Hathaway, West Somerville, Mass.

A good roads meeting followed at the armory. Senator Mann made an eloquent address. He urged the State instead of turning its surplus money to other States to spend it for good roads. He said the Florida legislators would do whatever the public demanded of them.

The visitors returned to the Ormonde Hotel in a gasoline launch, thus having a delightful night ride of five miles on the Halifax River.

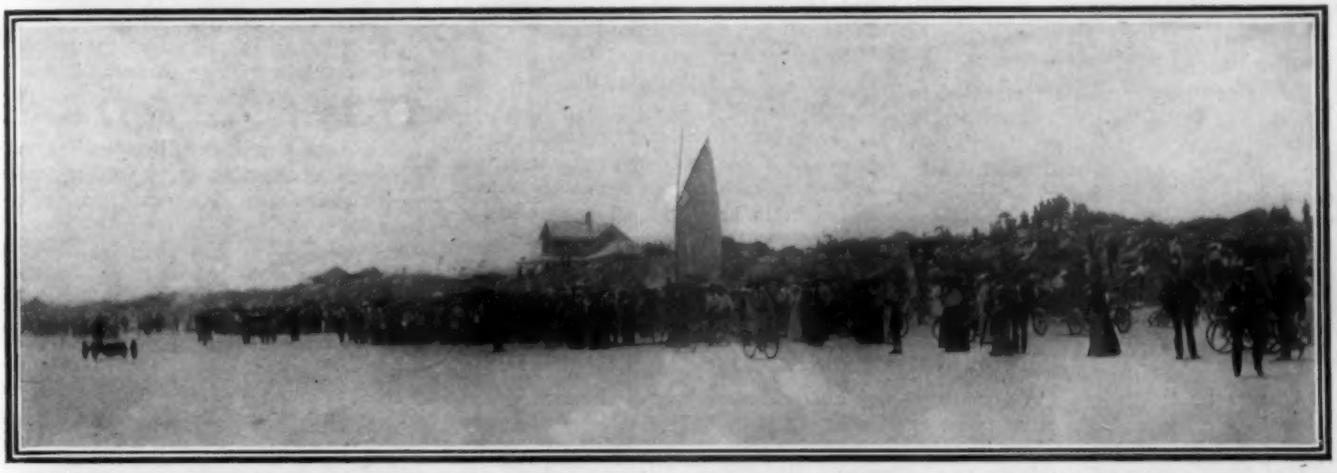
PROSPECTS FOR DECORATION DAY RACE MEET.

Special Correspondence.

INDIANAPOLIS, Ind., March 28.—Arrangements for the Decoration Day races at the State Fair Grounds are almost complete and the meeting promises to be the most notable in the history of the State. More than twenty machines that can do more than thirty miles in the hour have been entered, including the two big racing cars that the Mohawk Cycle Co. is building for Carl Fisher, a local dealer, and Earl Kiser, of Dayton, who will drive them in the races.

At the meeting a year ago only two large machines entered. The weather was favorable and a good crowd attended. The fact that there has been such an increase in the number of the high powered cars is pointed to as evidence that the meeting this spring will be the largest ever held.

One large machine from Fort Wayne, another from Richmond, and others from other points in the State will be driven to the fair grounds under their own power. Their arrival will be one of the most interesting features of the day. There will be events for motor cycles as well as automobile races, but bicycles will be barred.



ORMOND-DAYTONA RACE MEET—WINTON'S BULLET COMING DOWN THE LINE AT THE FINISH.

Mr. Winton then made a ten-mile run with a turn at the five-mile post. In order to have a witness that he turned at the five-mile post and to get his time for the five miles, Mr. Peters was taken aboard with a watch. The time made for the ten miles was 10:26 1-5, including the turning, as against Winton's own ten-mile world's track record of 10:50. Mr. Peters brought back his watch showing 4:46 1-5 for the five miles.

MATCH FOR ORMOND CUP.

The "Bullet" and the "Pirate," with Winton and Thomas as their respective drivers, appeared at the tape for the mile race for the Ormond Challenge Cup.

Winton let Thomas get fifty yards' lead on a standing start before getting under way himself. In addition to this advantage the lighter "Pirate" got its headway quicker than the heavier "Bullet." It was a warm chase. Winton caught Thomas near the finish and beat him out by one-fifth of a second, in 1:15.

Legislative and Legal News.

Special Correspondence.

MINNEAPOLIS, March 28.—House bill No. 671, introduced by the Committee on Judiciary on March 18, and reported back on the same day, was passed by the lower house of the Legislature last Thursday. The new law goes into effect immediately. It is entitled "An Act Regulating Automobiles, Motor Vehicles or Motor Cycles on Public Roads, Highways and Streets within the State of Minnesota."

The speed of automobiles and motor cycles is limited to eight miles an hour in the thickly settled or business portion of any city or village in the State, and to four miles at crossings or cross-walks within the limits of any city or village when any person is upon the same, while outside of the thickly settled parts of towns twenty-five miles is permitted. The driver of the automobile must stop his machine upon signal by the driver of any horse-drawn vehicle until the latter has passed, and shall observe the usual rules of the road by passing to the right of vehicles met and to the left of those passed from behind.

Before any person will be permitted to operate any automobile or motor bicycle, whether steam, gasoline or electric, on the public highways, he must obtain a license from the State boiler inspector in the county where the automobile or motor cycle is owned, at a cost of $2, which license must be recorded by the inspector in consecutive order, and the number thereof must be painted in plain figures upon the back part of the machine in a conspicuous place, the figures to be not less than 4 1-2 inches long. A proviso to this section excepts the driver or operator of any machine which has been licensed by any municipality of the State or the numbering of which has been provided for by any city. One-half of the license fee goes to the county treasurer and the other half to the inspector.

The law also makes obligatory the carrying of at least one lighted lamp "during the hours of darkness," upon some conspicuous part of the vehicle; and also a bell or horn, "which shall be rung or blown whenever there is danger of collision or accident."

Amended Massachusetts Bill.

Special Correspondence.

BOSTON, March 19.—A new draft of the most stringent anti-automobile bill ever presented in the Massachusetts Legislature was the feature of the second hearing on the automobile bills now before the Roads and Bridges Committee on Monday. It drops the provision so much objected to in the first bill, shutting out of the State all autos capable of making twenty miles or more per hour; and it does not touch the speed question at all, leaving the limits of ten and fifteen miles to stand as at present in the statutes. But it requires registration at $5 per entry with th: State Highway Commission, with proper and legible marks and numbers on vehicles; requiring new registration when a machine is loaned for more than five days or let for hire, and allowing manufacturers or dealers, however, to take out one registration mark which may be duplicated and used on any or all carriages which he is holding in stock and yet is using on the streets for demonstration or other purposes. Licenses are required for those wishing to operate autos for hire ($5 fee); and for amateurs who operate autos ($2 fee), although only the hired chaffeurs are required to make display of their license numbers. For violations the penalties are $100 fine, or imprisonment for ten days, or both, and possible revocation of license or registration certificates. Suspension of the certificates is also provided for violations at the discretion of the Commissioners. The bill reserves to park and local authorities the independent rights they now have to restrict autos.

The bill was discussed at length at the hearing. Those in favor emphasized their belief that each city or town should have the right to act for itself in making restrictions, as they do now. This the automobilists wish very much to overrule, as they believe a uniform State law to be very d sirable.

INANE AUTOMOBILE LAW IN FORCE IN MISSOURI.

Special Correspondence.

KANSAS CITY, March 28.—The Missouri Legislature has passed and the Governor just signed an inane automobile law that has aroused the ire of the motorists of the State, because it denies them equal rights on the roads with other users and requires the payment of unlimited licenses.

The new State law requires that "Every person, corporation, company, or co-partnership engaged in operating any automobile * * * upon any of the public streets, roads or highways of this State shall keep a vigilant watch for vehicles * * * drawn by animals, and especially vehicles * * * driven by women or children, and shall, when approaching any such vehicles, * * * stop such automobile for such a time as to enable such person in charge of any such vehicle to pass, or if going in the same direction, shall, before attempting to pass, give said driver * * * sufficient notice of his or their intention to pass by the sounding of a bell or whistle, and, if necessary, to prevent the fright of such animal or animals, bring said automobile to a stop in order to give such driver or person an opportunity to alight from such vehicle, carriage or wagon."

It is provided further that the driver of an automobile shall, when required by the driver or person in charge of any horse-drawn vehicle, give the right of way "and shall not run such automobile at a greater rate of speed than nine miles per hour."

PROVISIONS ARE AMBIGUOUS.

These provisions of sections 1 and 2 are ambiguous and indefinite. The limitation of speed to nine miles an hour probably applies only to the time when passing a horse-drawn vehicle, but has been interpreted by some to limit the speed at all times on any road or city street in the State to nine miles. The requirement that the automobilist "shall give sufficient notice of his intention to pass, by the sounding of a bell or whistle," takes no recognition of the widespread use of horns on automobiles and leaves it open to proof and the uncertain judgment of witnesses whether the notice was "sufficient" or not. The requiremeat that the operator shall, "when required by the driver or person in charge of any vehicle * * * drawn by any animal or animals, give the right of way to such driver of such vehicle," does not specify whether the driver of the animal-drawn vehicle is to make the requirement by signaling with his hand, by shouting, or by writing a note and calling a special messenger to deliver it.

LICENSES AND NUMBERS.

Any person or group of persons wishing to operate an automobile must "obtain a license from the license commissioner, in a city having such a commissioner, or if desired to operate same in any county outside the incorporate limits of any such city on any of the public highways * * * of the State, shall obtain a license from the county clerk * * *" at a cost of $2 per year for each automobile, which sum of money "shall be paid into and become a part of the general road fund." Each license will be numbered and numbers corresponding to them must be placed "at a conspicuous place" on the automobile. If the vehicle is operated at night it must carry two lighted lamps "on the front part," and the license number must be "painted on the lamps in legible figures at least three inches long."

PRODIGIOUS PENALTIES.

The penalties provided for violation of any of the provisions of the law would be likely to alarm any one not familiar with the enforcement, or lack of enforcement, of Missouri laws. The minimum fine is $100 or thirty days in jail, while the maximum is $1,000 or six months, or both.

The law is ambiguous also in regard to whether a license is required in every city or county in which the vehicle is

operated or whether a license in any one is sufficient for all. By the letter of the law, if the motorist is a tourist or one who traverses extensive territory in his automobile on business, he would have to buy dozens of licenses and carry a can of paint and a brush and change the figures on his vehicle and lamps every time he crossed the limits of a county or incorporated town. By the law, the owner of an automobile who lives in an incorporated city cannot venture beyond its limits without first securing an additional license from the clerk of the county. There are 114 counties in Missouri, so that if a man wants to operate an automobile in all parts of the State it will cost him $228 for county licenses and $2 extra for each incorporated city that he wants to enter. This is in addition, too, to a $5 license required by the local law in Kansas City.

As yet most of the automobiles in the State are owned in St. Louis, Kansas City and St. Joseph, the three cities having more than 100,000 inhabitants. Interest in automobiling has been increasing rapidly, and many new vehicles will be bought this season if the new law does not have any deterrent effect. Local motorists say that they will tender $2 for the purchase of a license here and make a fight if any more is demanded.

CHANGES ARE MADE IN THE CONNECTICUT AUTOMOBILE LAW.

Special Correspondence.

NEW HAVEN, Conn., March 27.—As the Connecticut automobile law will probably be modified, it imposes no hardship to the automobilist in this State who tries to handle his machine with any degree of conservatism.

The Committee on Public Health and Safety, to whom was left the matter of consolidating the various measures before the Legislature concerning the automobile in one bill, reported the new measure to the House of Representatives recently. The bill as reported by them will probably become a law, after it has been discussed in the House, as it has many friends in the entire General Assembly.

As finally drawn, the bill presents two important changes in the automobile law. The first paragraphs provide that "no automobile or motor vehicle shall be operated until the owner has filed with the Secretary of State his name, address, description of vehicle owned, and shall have obtained from the Secretary of State a numbered certificate for each of said vehicles, which certificate shall state the name of the owner of the said vehicle and that he has complied with the law.

"The Secretary of State shall keep a record of all such statements and of all certificates issued by him. Each automobile or motor vehicle shall have the initial of the State and the number of the certificate issued, on the back thereof, this letter and figure to be three inches high. A fee of $1 shall be paid to the Secretary of the State for each certificate issued by him.

"No license, however, shall be required for automobiles offered for public hire, or for those owned by manufacturers or dealers and employed in private business, or for the private use of such manufacturers and dealers, or required of automobile owners who have complied with similar laws in other States. The penalty for violating this law shall be $25."

This law is said to be very satisfactory to Representative J. R. Warren, of Lyme, the father of much of the adverse legislation planned for the automobile in the present General Assembly. It is stated here that the above proposed law which is entirely new in this State, there being nothing like it on the statute books, is intended to be in line with the laws of New York, Massachusetts, New Jersey and other States. Representative Ford, of Washington, Litchfield County, who is a member of the committee, stated to a representative of THE AUTOMOBILE that automobile owners from other States driving into Connecticut would have to comply with the law now or else take the consequences, as he felt sure this law would go onto the statute books.

The second feature of the new law is a change of the portion regulating speed, making it possible to send a man to jail as well as fining him, for running motor vehicles too fast. This regulation keeps the speed limit at the old figures of 15 miles an hour in the country and 12 miles in the city, but it adds an alternate of "thirty days in jail" to the present fine, which is limited to $200.

Altogether it is believed that no fault will be found with the proposed new laws by the automobile-driving public.

As for the other regulations governing automobiling in this State, the use of horns and gongs is not required by the letter of the law, but they are always used; lamps are required on all rubber-tired vehicles, and they must be lighted from an hour after sunset to one hour before sunrise. If the lights go out the operator may proceed at the rate of 6 miles per hour, giving "audible signals" at every 500 feet. A schedule of ferry tolls for automobiles will also be passed at this session of the Legislature.

Important Amendment to Patent Laws.

Special Correspondence.

WASHINGTON, D. C., March 28.—One of the closing acts of the last Congress was the enactment of an amendment to the patent laws providing that an application for patent may be filed in this country by any person who has previously regularly filed an application for a patent for the same invention in a foreign country, which, by treaty, affords similar privileges to citizens of the United States. The application will have the same force and effect as if filed in this country on the date when the application was made in the foreign country, provided it is filed within twelve months. This privilege is limited to such inventions as have not been on sale or have not been patented or described more than two years before the application is made.

The law as it now stands permits the taking of oaths before any authorized foreign officer, provided proof of his authority is made by certificate of the foreign representatives of the United States. The act also allows foreign executors or administrators to apply for patents upon the right of deceased foreign inventors and extends the privilege to filing caveats in interference cases to foreingers. By this last provision the United States no longer discriminates against foreigners in respect to caveats, as there has long since ceased to be discrimination in respect to applications for letters patent.

The amendment simply carries out the suggestion of the United States delegates to the International Convention for the Protection of Industrial Property, held at Brussels in December, 1900.

Indiana Automobile Bill Vetoed.

Special Correspondence.

INDIANAPOLIS, March 28.—The Senate automobile bill which was before the Legislature last winter and was finally passed did not become a law, Governor Durban having vetoed it this month. He gave as his reason that the measure was class legislation and therefore unconstitutional, because it provided that the driver of an automobile must turn to the right when meeting others on the country highway, but contained no such provision regarding cities.

Ordinances discriminating against automobilists were passed at the annual town meeting in Manchester, Mass., March 9. This Cape Ann village has one of the most exclusive summer resident colonies on the north shore and its citizens have always fought anything which they imagined might interfere with their perfect rural peace. The new ordinances provide that "no vehicle except such as is drawn by a horse or person shall be propelled on any street in the town at a rate of speed exceeding ten miles an hour, and no such vehicle shall be run on any public way within three-quarters of a mile of the town hall at a rate of speed exceeding eight miles an hour." Another section provides for a fine not exceeding $100, or by imprisonment not exceeding ten days, or by both, such fine and imprisonment.

The establishment of an automobile 'bus service on a large scale is being considered by a company of Cincinnati promoters. The use of 500 double decked busses and the adoption of a five-cent fare between the center of the city and the suburbs is contemplated.

Motor Boat Building in New England.

All Shops Busy Beyond Their Capacity Filling Home and Foreign Orders for Local, Seagoing, Lobstermen's and Whaler's Craft Equipped with Gasoline Motors.

Special Correspondence.

NEW LONDON, Conn., March 28.—Anticipation of an early spring seems to have stirred motor boat builders and owners to begin activities very early this year along the New England coast. From reports sent out from all sections it is discernible that new craft will be more in evidence than in any year since the motor boat "arrived." Among the fifty odd builders of boats and motors in Connecticut the rush season is already on. In fact the hustlers are so driven with new work that they have no time to answer queries or show what they are doing. New London has acquired two engine-building plants and four boat-building shops within the past year, and the heads of these enterprises are barely able to get enough to eat in the few minutes they can spare from business.

Craft which will make records will come from the works bearing the mark of Frederic S. Nock, of West Mystic, the designer of speedy launches. His two latest contracts are for 28-foot speed launches equipped with 14 horse power Buffalo engines and guaranteed to speed 14 miles an hour. R. W. Ellis, of Palm Beach, Fla., and L. O. Mecam, of Chicago, will be the owners. Both launches will come from Mr. Nock's own shipyard at East Greenwich, R. I.

From the boat shop of Charles F. Ferguson, of this city, will come a 24-foot fishing boat equipped with 4 1-2 horse power motor for George T. Willoughby, of New London. Byron Bailey, of Boston, will be the owner of a 31-foot launch with a 10 horse power engine guaranteed to whip up some speed, and an 18-foot motor boat is also in the works for the same enthusiast.

Benjamin Dibble, a newcomer among the builders, is turning out at his shop in Norwich a 35-foot launch to be equipped with twin screws and two engines, the boat to be used on the Thomas River. The launch will have a cabin and modern equipment throughout.

E. A. Ely, of Middletown, who recently shipped two launches to South Africa, has, after engaging the services of an interpreter, learned that a resident of Paris, France, desires a Yankee built boat, and the little craft will be shipped across before the close of the month.

In the half dozen Noank shops orders for new craft and improvement of old ones have taken a sudden bound, the lobstermen being especially urgent now that a truce has been effected with the New York State authorities, which will allow the Nutmeg-Staters to haul pots in New York waters. At the Palmer & Son Co. shipyard the big auxiliary yacht Rosalie, the property of ex-Commodore Hooker, of the Hartford Yacht Club, has been prepared for a trip to New London for repairs and a general overhauling, to cost $4,000. Her keel will be lowered 28 inches and a 32 horse power Murray & Tregurtha gasoline engine of the latest design will replace the motor of the same make now in the vessel. Willson & Griffin, of New York, will also furnish a new suit of sails.

C. A. Freeman and James Golden, of Norwalk, are having twin launches built at Croton, N. Y., the boats to be 32 feet long and equipped with four-cycle motors of 19 horse power. Captain R. A. Lamb, of Groton, has just received from Lynn, Mass., a 20-foot launch with 3 1-2 horse power motor, to be used for trawl fishing.

At the Newport shipyard work has been started on the moulds for a new sea-going launch for Colonel Reginald Norman from designs by William H. Hand, of New Bedford. The craft will be 46 feet over all, 40 feet 6 inches water line, 9 feet 10 inches beam, 3 feet 6 inches draught, and a depth of hull of 6 feet 6 inches. Instead of the usual light work house the small house will be practically a continuation of the hull, rounded forward to take the seas easily, and cut away aft where there will be a good-sized cockpit for use in pleasant weather. The house will be fitted with dead-lights. She will have two light masts for leg-o'-mutton sails, and a 25 horse power kerosene motor.

Built at New Bedford by Charles P. Beetle, under the direction of Captain J. A. Tilton, is a new sort of whaleboat to be run by power. The boat is for Captain William Mogg, of the schooner *Bonanza*, of San Francisco, who has achieved some distinction as an Arctic whaleman. The motive power will be a kerosene engine for the purpose of doing away with the necessity of a battery. The boat is very much like a whaleboat excepting that she has a straight stern post, is a little heavier built and has double planking on under body. With the 10 horse power engine on the trial trip she made about eight miles an hour. She can be used to tow a whale to the ship, to chase a whale, to tow other boats and even to tow the schooner two or three knots an hour. Captain Mogg was recently in New Bedford and stated that three new schooners have been added to the Arctic whaling fleet, all fitted with auxiliary gasoline engines.

From Gloucester comes a summary of launch news of interest. Oscar Perkins is completing a 23-foot gasoline launch for Harry B. Pew, to be named the *Galula*. John Pomeroy is building a 21-footer for his own use. John Merchant is finishing a 22-foot motor boat which will fly the East Gloucester Club flag. Andrew Wheeler and Harvey Wheeler's sons are at work on six gasoline launches each 23 feet long. Perry Wheeler is building for John M. Cole, of Andover, a 25-foot gasoline launch.

At Bath William M. Stevens has finished an 18-footer for a local resident and has orders for five canoes to be built for members of the New York Canoe Club.

The foregoing is but a meager summary of the work now in hand, but it shows conclusively that the spring and summer will be hustling months for all interested in small boats along the New England coast. And doubtless the same condition exists elsewhere.

GROSVENOR BILL REQUIRING LAUNCH LICENSES IS SMOTHERED.

Special Correspondence.

WASHINGTON, D. C., March 28.—A measure of especial interest to manufacturers and users of small gasoline and electric launches and launch engines was smothered in the closing days of the last session of Congress. This bill, known as the Grosvenor bill, provided that all vessels carrying freight or passengers for hire, propelled by gas, fluid, naphtha or electric motors, should be subject to the laws relating to the inspection of hulls and boilers, and requiring engineers and pilots. At present all vessels of this description under fifteen tons burden are not so subjected. The bill dragged through two sessions of Congress, and just a few days before adjournment of the last session the House Committee on the Merchant Marine and Fisheries favorably reported the measure, urging its enactment into law. The manufacturers of launches and engines, and other interested parties, resisted its passage on the ground that it was unnecessary and that its operation would prohibit absolutely the use of such small vessels, the business of which would not justify a compliance with the proposed law.

Catalytic ignition—produced by a small piece of platinum alloyed with rhodium and ruthenium, which becomes incandescent when exposed to the action of a hydrocarbon gas containing oxygen—has been adopted by the French Secretary of the Navy for the motors in submarine boats, if an advertisement by one of the two foreign manufacturers offering ignition devices on this system may be believed.

Makers Combine to Share and Defend Patent Rights.

The control of 90 per cent. of the output of gasoline automobiles manufactured in the United States will, it is said, be in the hands of the Association of Licensed Automobile Manufacturers when the ten or more makers who have signified their intention of doing so join nineteen of the leading manufacturers who are now members of the association, the final steps toward whose organization were taken during the past fortnight.

The chief object of the association, according to the declaration of its general manager, President George H. Day, of the Electric Vehicle Co., of Hartford, is to secure the general agreement of the automobile manufacturers of the United States in the adoption of a plan, arranged between the promoters of the association and the Electric Vehicle Co., for an amicable settlement of the dispute over the famous Selden patents, owned by that company.

PAY ROYALTY ON SELDEN PATENT.

The scheme which has finally been settled upon and agreed to by all the companies that have joined the association contemplates the payment of a royalty to the Electric Vehicle Co. by each of the associated companies of 1 1-4 per cent. annually on the value of its product during the remaining life of the patent, or a little less than ten years. Of this 1 1-4 per cent. the Electric Vehicle Company agrees to pay back two-fifths, or one-half of 1 per cent., on the product into the treasury of the association. The fund raised in this way will be used if necessary for litigation, the members of the association agreeing that it shall undertake such expenses. From time to time the association may take other responsible automobile manufacturers into its membership, they to assume the same obligations and royalty assessments as the original members. When the life of the patent expires, on November 5, 1912, the obligation of the members to the Electric Vehicle Co. will cease. But according to present plans, the association will continue active in the lines mapped out for it as long as the automobile industry continues.

TO DEFEND OTHER PATENTS.

Chief among its activities will be the protection of owners of individual patents from infringement of them, and to assist each member in the development of the automobile along the most rapid and desirable lines. The exchange of individual patent rights among the members will be allowed when desired, and although this might at first seem a difficult and unlikely thing to bring about, the promoters of the association believe that as the members of the association get to know one another better this system will result in great advantage to all parties concerned. The infringement of any patent by irresponsible concerns can be fought with the large fund to be raised by the royalty assessment scheme.

OFFICERS OF THE ASSOCIATION.

At the request of the original companies which are forming the association, George H. Day has become general manager for the organization, with offices at 100 Broadway, New York city. The other officers are: President, Frederick L. Smith, of the Olds Motor Works, Detroit; Vice-President, Barclay H. Warburton, of the Searchmont Automobile Co., Philadelphia; Secretary and Treasurer, Henry B. Joy, of the Packard Motor Car Co., Warren, O.

LIST OF PRESENT MEMBERS.

The companies already included in the association are: The Winton Motor Carriage Co., Olds Motor Works, Peerless Motor Car Co., Searchmont Automobile Co., Haynes-Apperson Co., Apperson Bros.' Automobile Co., Knox Automobile Co., Locomobile Co. of America, Autocar Co., George N. Pierce Co., Pan-American Motor Co., International Motor Car Co., United States Long Distance Automobile Co., Pope-Robinson Automoble Co., Waltham Manufacturing Co., J. Stevens Arms and Tool Co., H. H. Franklin Manufacturing Co., and the Electric Vehicle Co.

One of the clauses in the agreement which is signed by the companies joining the association recognizes the validity of the Selden patent. Thus disappears the bone of contention which has existed between the owners of this patent and the automobile manufacturers who have cared to fight it, notably the Winton Motor Carriage Co.

SMITH & MABLEY SUIT PENDING.

That there will still be opposition to the Electric Vehicle Co.'s plan is shown by the suit, still pending, between it and Smith & Mabley, of New York city. The case was set for a preliminary hearing in the United States Circuit Court, in New York city, on Monday, March 30, but this has been postponed to April 6. Counsel for the plaintiffs are Betts, Betts, Sheffield & Betts, and for the defendants, Fletcher, McCutcheon & Brown.

While the companies in the new association have apparently concluded that they can save money by accepting the Electric Vehicle Co.'s terms, one of the members of the firm of Smith & Mabley asserted that the Selden patent was "too broad" and would not hold if its validity was fought.

SELDEN'S BROAD CLAIM.

The question of the validity of the Selden patent is not a new one. George B. Selden, a Rochester, N. Y., lawyer, applied for a patent on a horseless carriage propelled by a liquid hydro-carbon gas engine, May 8, 1879. The most important claim which he then made for his vehicle was:

"The combination with a road locomotive, provided with suitable running gear, including a propelling wheel and steering mechanism of a liquid hydro-carbon gas engine of the compression type, comprising one or more power cylinders, a suitable liquid fuel receptacle, a power shaft connected with and arranged to run faster than the propelling wheel, an intermediate clutch or disconnecting device and a suitable carriage body adapted to the conveyance of persons or goods, substantially as described."

The model submitted with the claim is still in the model room of the patent office.

UPHELD BY JUDGE COXE.

The owners of the Selden patent base their chief legal claims for its validity on the decision of Judge Coxe in the United States Circuit Court, in New York city, November 10, 1900, in the suit of the Electric Vehicle Co. against the Winton Motor Carriage Co. The defendants claimed that Selden's device was not a new invention at the time the letters patent were granted, and as it was therefore not a patentable device, there could be no infringement upon it. Judge Coxe ruled, however, that the gas engine for road purposes was not known at the time Selden applied for his patent, and declared that some measure of inventiveness was required for the substitution of gas for steam as a motive power for road vehicles. He held, therefore, that Selden's vehicle, while crude and tentative, was to be regarded as the first concrete effort to construct a road locomotive provided with a liquid hydro-carbon engine of the compression type, which left the platform of the carriage unobstructed.

The controversy has not affected electric or steam vehicle manufacturers.

Electric Patrol Wagon.

Police Commissioner Greene, of New York city, is considering the adoption of an electric patrol wagon. A model made by the Electric Vehicle Co. has been examined and found favor in his eyes. It is a nine horse power wagon, of the type recently adopted in Atlantic City, and, it is claimed, cost there but $1.85 a day for operation. With a charging plant in any police station, the wagon would be always ready. Its absolute cleanliness is one of the chief claims of the wagon. It can be left in the same room with the men, so that when a call comes no time is lost, as would be the case with a horse-drawn wagon, which must be left in a stable at some distance from the men's sleeping quarters.

News of the Automobile Industry.

Special Correspondence.

CLEVELAND, March 28.—R. Hansen, president of the General Automobile and Manufacturing Co., has commenced the manufacture of automobile bodies in a factory at the corner of Perkins Avenue and the C. & P. tracks, but he expects to move into larger quarters as soon as they can be secured, as he is finding such a market for his product that it cannot be supplied in the shops now used. Mr. Hansen will make all styles of bodies to order, but will make a specialty of a combination pleasure carriage and delivery wagon, such as was seen on one of the General's machines at the Chicago show. It is arranged in such a way that a portion of the carriage body may be easily removed and with the addition of another style of side forms a neat and attractive light delivery wagon. Mr. Hansen says that there is already a demand for this body and that he expects to make a feature of it in the future. This business has nothing to do with the automobile company and is conducted by Mr. Hansen personally.

PLANS FOR WINTON ENLARGEMENT.

It is stated that the addition to the factory of the Winton Motor Carriage Co. will increase the floor space from 172,000 square feet to 500,000 square feet, and that the present output of vehicles will be trebled. More real estate has been purchased in order to make room for the new buildings which will be used for the assembling, power and woodworking departments, and in addition a repair department will be equipped to turn out parts and repair any machine ever turned out of the Winton factory. The machinery for the new buildings has been ordered, and will be completed and delivered by the time they are in condition to receive it. Two 150 horse power steam engines to furnish power for the new buildings and a 100 horse power engine to operate the lighting plant have been purchased. The gasoline engines at present in operation will be used for the shops now in operation. The building now used for machine shop and assembling will be used exclusively as a machine shop, and the one used for woodwork, painting and decorating will accommodate the painting and decorating department alone, after the new buildings are completed. The space in the foundry building now occupied by the power, heat and light plants, will be used for foundry purposes.

ADDITION TO STEARNS PLANT.

The F. B. Stearns Co. has built an addition to its factory and a lot of new machinery, including three Draper lathes, a Fellow gear shaper and a Lucas boring machine will be added. The company has found it necessary to make this addition in mid-season.

The Horseburgh Forging Co. has had plans drawn for a new plant on Hamilton street to accommodate its increasing business in automobile forgings, of which it is making a specialty. The building will be 100 by 50 feet, and one story high.

TO MAKE PARTS FOR BUILDERS.

William A. Hatcher and F. O. Brew have formed a partnership under the firm name of Brew & Hatcher for the manufacture of automobile parts and to execute contract work for automobile manufacturers. Their line will consist of oil pumps, motors, transmission gears, speed devices, carbureters, and other parts, all to be made under their own patents. Their factory is located on Winter street, and they have offices at 34 and 36 Columbus street. They are installing high grade machinery. Mr. Hatcher had been identified with both the Winton and Packard factories in the past. The firm will cater only to manufacturers and not to the public.

PEACE AND ACTIVITY AMONG AKRON TIRE MAKERS.

Special Correspondence.

AKRON, March 28.—The litigation which for nearly three years has been going on between the Goodyear Tire & Rubber Co. and the Consolidated Rubber Tire Co. has been settled out of court. The Goodyear Tire & Rubber Co. brought three suits against the Consolidated company, claiming in the aggregate $60,000 for tires delivered to the defendant company. The Consolidated company countered with a suit for $150,000 damages, alleging that the tires were not according to specifications. Through an attachment suit to recover tires already delivered, the case reached the Supreme Court of Ohio. The settlement was accomplished at a meeting in New York, and although each party pays half the costs the Goodyear people are credited with at least a partial victory.

MAKER'S PROTECTIVE ASSOCIATION.

A plan is working out for the formation of a manufacturers' association here, mainly to deal with the labor problem. It will include all the large rubber manufacturers. The purpose is not to oppress labor nor reduce wages but mutually to oppose boycotts and all such methods of intimidation. A general secretary will give his whole time to the interests of the organization. A number of such associations have been formed in Ohio and elsewhere, all of which, it is expected, will work in harmony and eventually have one chief head.

SOLID TIRES ON REAR WHEELS.

The Firestone Tire & Rubber Co. is meeting with considerable success in advocating the use of solid rubber tires on the drive wheels of automobiles, even though the forward wheels may be equipped with pneumatic tires. The company says this plan has been growing in popularity in England and believes the same will be true in America. The Firestone factory is running twenty-four hours a day, largely on automobile tires.

NO RISE IN TIRE PRICES.

The nearly stationary price of crude rubber makes it certain there will be no advance in prices of tires or other manufactured rubber this spring.

Secretary R. P. Marvin and Superintendent E. C. Shaw, of the B. F. Goodrich Co., are in Europe for a six weeks' stay. Incidentally they will look for motor tire improvements. President George T. Perkins, of the same company, has been spending some time in California.

PLANS FOR MILWAUKEE AUTO SHOW IN THE MONTH OF MAY.

Special Correspondence.

MILWAUKEE, March 27.—Arrangements were completed last evening, at a meeting of the Milwaukee Automobile Club, to conduct the first automobile show ever held in the State of Wisconsin. The Wisconsin National Guard armory on Broadway, has been leased for the first week in May for the exhibition. Committees have been appointed to look after the details pertaining to the display. Nearly all the floor space has already been engaged, though the plan was practically inaugurated only a week ago, and this has encouraged the promoters to such extent that they may possibly withdraw from the armory lease and secure the Exposition Building, which will give display room of about 75,000 square feet.

The Jonas Cycle Co., which handles the Haynes-Apperson, Darracq, Olds, Cadillac and the Rambler, was the first concern to put in a bid for space. The Weber Cycle Co., the Northwestern Furniture Co., which makes the Haase; the National Automobile Co., the International Motor Car Co., and several other concerns have also arranged for space. This assures at least a good exhibition.

It is not improbable that an automobile show will also be conducted in connection with the State Fair in September. Several automobiles have been purchased during the past few weeks and interest in the motor vehicle is on the increase. Among the new motorists can be included Eugene Wuesthoff, manager of the Schlitz Brewing Co.; S. W. Watkins, of the Christenson Engineering Co., and F. R. Bacon, of the Cutler-Hammer Mfg. Co.

The charter for the Beaumont Cycle and Auto Company, of Beaumont, Tex., has been filed. Its capital stock is $10,000. The incorporators are F. L. Rollins, H. B. Ford and J. S. Rollins.

Trick Driving and Road Racing.

Special Correspondence.

WASHINGTON, D. C., March 28.—Enthusiastic motorists have attempted on several occasions to surmount the broad flight of steps at the front of the Capitol, but the vigilant police who guard the building always nab them before they reach the top and compel them to back down. It has remained for William B. Hurlburt, of Detroit, who is in Washington for the automobile show, to make the most successful attempt that has yet been made to reach the top of the steps. The attempt was made early in the morning of March 25, and was the result of a wager made between Mr. Hurlburt and W. J. Foss, local representative of the company. In company with a photographer and a number of witnesses, the gentlemen reached the Capitol about 7 o'clock, and Mr. Hurlburt immediately set about to win his wager.

The tires of the Cadillac tonneau, which was used, were slightly deflated to lessen the shock of the contact with the sharp corners of the steps. Approaching the flight of stairs at a speed of about four miles an hour, the machine readily went up the first few steps and then stopped.

W. B. HURLBURT ASCENDING CAPITOL STEPS AT WASHINGTON, D. C.

More power was applied, and the tonneau began to creak and throb under the strain, but continued to rise step by step, and seemed likely to reach the top when a policeman appeared and commanded the operator to back down. At the base of the steps Mr. Hurlburt was placed under arrest and was compelled to deposit ten dollars collateral to insure his appearance in court. The collateral was forfeited.

The wager provided that if the machine got half-way up before the police interfered, Mr. Hurlburt was to be declared the winner, so Mr. Foss gracefully paid his bet, and also the ten dollars demanded for Mr. Hurlburt's appearance in court.

The accompanying photograph shows the position of the machine just as the policeman called a halt.

Fisher Wins a Muddy Race.

Special Correspondence.

INDIANAPOLIS, March 28.—A match race from here to Columbus, Ind., and return, a distance of eighty-six miles, on a bet of $500 a side, was won last Tuesday by Earl Fisher, from W. A. Carr, through a mishap to the machine driven by the latter. Fisher, brother of Carl Fisher, drove an Oldsmobile, while Mr. Carr used a Cadillac belonging to Conrad Mueller. The roads were deep with mud, and the ride was a severe test. Each contestant carried as a passenger a representative of his opponent. The start was made at the circle at 9:17 A. M. Fisher reached Columbus first at 12:22 and left at 12:27, while Carr broke his connecting rod two miles out of Columbus and had to be towed in, arriving at 1:01. All that Fisher had to do to win was to drive back to Indianapolis, but with the mud axle deep this was no easy task. Both machines got stalled several times on the outward run.

Gordon Bennett Race.

With the passage of the special act permitting the use of the Irish course for the Gordon Bennett race, by the House of Lords, in England, the seal of governmental approval is placed on the event. In a country where the national government exercises such minute control over the every day affairs of the people this means that the preliminary work for the race will be carried out in a very thorough manner. Preparations for policing the course are, we understand, already under way, and for this duty the authorities can draw on the highly efficient and well-organized Irish Constabulary. This is a guarantee that a free and open course will be kept for all competitors, a matter of no slight importance when a driver is eating up distance at the rate of perhaps 130 feet a second. Latest advices are that the race will be run some time between July 1 and 9 next. It is not unlikely that the winning machine of last year will be entered. It is now the property of the Marquis of Anglesea, but he has offered it to the British Club should there be any desire to use it in this year's contest. There is a possibility, too, that the King and Queen will witness the contest. King Edward is a skilled motorist, and as a royal visit to Ireland during the summer is talked of, it is not unlikely that this would be timed to make attendance at the race possible.

CHARLES JARROTT WRITES ABOUT THE INTERNATIONAL RACE.

Special Correspondence.

SYRACUSE, March 28.—In a letter to C. A. Benjamin, chairman of the racing committee of the Syracuse Automobile Club, Charles Jarrott, the British champion, states that he recently visited Ireland to inspect the course over which the Gordon Bennett Cup race will be run. Concerning the course he writes:

"It is a course upon which all the skill and nerve of drivers will be called into requisition, but one on which, nevertheless, the best man and the best car are going to win. Every person whom we met over there is enthusiastic over having the race, and I am quite certain that the number of people who will go to Ireland to see the event will be stupendous. Already rooms are being booked in the hotels in Dublin and the most elaborate arrangements are being made in connection with the event.

"A public subscription has been started over here merely for the purpose of improving the roads, so that a large sum of money will be at the disposal of the surveyors for the making of alterations and improvements in every piece of road which is not now in really excellent condition. Of course the fact of holding the race in Ireland equalizes the matter considerably for everybody. For your American team it is an enormous gain, as from my own experience in Continental racing I do not think they could hope to show up well in a long speed course like the Paris-Bordeaux, which road is known by foreign chauffeurs like an open book. I am certain that the struggle over an open course in Ireland is going to be much keener and much more hardly fought than if the cup race were merely a scramble at lightning speed from Paris to Bordeaux."

Mile and Kilometre Speed Records.

HEAVY GASOLINE CARS (OVER 2,000 LBS.)

ONE MILE.

	TIME.	HOLDER.	MACHINE.
Florida Beach Record	:52 1-5	Winton	Winton
Former American Record	:51 4-5	Fournier	Mors
World's Record	:46	Augieres	Mors

ONE KILOMETRE.

	TIME.	HOLDER.	MACHINE.
Florida Beach Record	:32 4-5	Winton	Winton
Former American Record	:34 4-5	Walsh	Mors
World's Record	:29	Fournier	Mors
World's Record	:29	Augieres	Mors

LIGHT GASOLINE CARS (UNDER 1,000 LBS.)

ONE MILE.

	TIME.	HOLDER.	MACHINE.
Florida Beach Record	1:06 1-5	Thomas	Olds
Former American Record	1:27 3-5	Longuevez	De Dion
World's Record	:48 3-5	Thery	Decauville

ONE KILOMETRE.

	TIME.	HOLDER.	MACHINE.
Florida Beach Record	:42	Thomas	Olds
Former American Record	:59	Thompson	Renault
World's Record	:30	Thery	Decauville

MOTOR BICYCLES.

ONE MILE.

	TIME.	HOLDER.	MACHINE.
Florida Beach Record	1:03 1-5	Hedstrom	Indian
Former American Record	1:10 2-5	Metz	Orient
World's Record (heavy)	:53 2-5	Derny	Clement
World's Record (medium)	1:05	M. Fournier	Carreau
World's Record (light)	1:05 2-5	Derny	Clement

ONE KILOMETRE.

	TIME.	HOLDER.	MACHINE.
Florida Beach Record	:39	Hedstrom	Indian
Former American Record	:43 3-5	Metz	Orient
World's Record (heavy)	:33 1-5	Derny	Clement
World's Record (medium)	:39 2-5	Lamberjack	Griffon
World's Record (light)	:39 4-5	Derny	Clement

Westerly Steam 'Bus Line Suspends.

Special Correspondence.

NEW LONDON, Conn., March 28.—John P. Thompson, of Providence, president of the People's Rapid Transit Co., of Providence and Westerly, R. I., was in Westerly recently and ordered the suspension of the automobile omnibus business. The company started the line in Westerly last November, but the volume of business was never sufficient to meet expenses.

The five vehicles which have been in use in Westerly will be stored there temporarily and later sent to Providence. President Thompson said that the company had plans for using them at summer resorts. He also said the venture in Westerly had not proved a serious loss to those financially interested.

New Auto Periodical.

A new periodical in the automobile field comes to us from Los Angeles, where it is now issued monthly under the title of *The Pacific Automobile*. It is a very interesting digest of automobile doings on the Pacific slope, and the text is attractively illustrated with half-tone engravings. California is sure to come into popular favor with touring motorists, and any medium that will help them to a better understanding of the situation is a welcome addition to the periodical literature of the new vehicle. We extend a cordial welcome to the new publication and wish it much success.

Permanent Auto Show.

An automobile show including about fifty vehicles of every type, the product of twenty different manufacturers, was opened last Saturday on the top floor of the department store of R. H. Macy & Co., at Thirty-fourth street and Broadway, New York city. On this floor the large exhibition hall is 400 feet long and 200 feet wide, with an immense dome skylight 200 by 70 feet. A track on which electric vehicles will be operated will encircle the hall and at the sides will be the exhibits. These include Mobiles, Baker and Buffalo electric cars, Oldsmobiles, Thomas, United States, Long Distance, Victor Overman, Cadillac, Grout, American Darracq, Ajax and Prescott machines. The Bayonne Electric Co. shows some of its launches and the Milton Point Shipyard an auxiliary catboat. There are also some Rushton, Morin and Old Canoes Companies' exhibits, and the Howard and Fairfield motors. Automobile clothing and other accessories also have a place. H. L. Jesperson is in charge of the show.

New York Dealers Organize.

Representatives of eight leading automobile dealers in the city of New York met at 7 West Forty-second street on Tuesday, March 31, for the purpose of organizing a local association. The meeting was called by Percy Owen and George B. Adams, and Mr. Adams presided, while Harry Unwin acted as secretary. The necessity of adopting as principal objects of the organization some plans and rules for regulating prices charged for the storage and repair of vehicles and for preventing the exaction of commissions by operators employed by individual owners were discussed, and all present agreed to support the movement and join the association. No name was decided upon, but Percy Owen, E. B. Gallaher and J. F. Plummer, Jr., were appointed a committee to draw up a constitution and by-laws and to report at a meeting to be held on April 7.

Asks Suggestions for Steel Speedway.

Members of the Automobile Club of America were asked by Gen. Roy Stone, at the regular Tuesday night meeting of the club, for suggestions as to good places where the mile of steel rails still in the hands of the club might be laid for an automobile speedway, the place proposed at Creedmoor having been criticized as too inaccessible to automobilists. The reason for wishing to use the remaining rails for a speedway, said the General, is because the authorities of New York city seem inclined to lay their own steel rails now. On Monday Gen. Stone had been asked by City Engineer Olney to help prepare specifications for the laying of such rails in Elm street, the rails having been approved by both the engineer and President Cantor, of Manhattan Borough, as a result of the success of the experimental block laid last fall in Murray street. Engineer Basing, of the Dock Department, has also recommended the use of similar rails on the city docks.

Good Roads Convention in St. Louis.

National aid for highway improvement is expected to be the principal subject of discussion at a good roads convention to be held in St. Louis on April 27, arrangements for which were completed recently. Delegates have been appointed by many States and it now looks as if the conventio will be made up of representative men from all parts of the country.